



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application: Hui et al.

Serial No.: 10/032,757

For: METHOD AND SYSTEM FOR FORMING DUAL GATE  
STRUCTURES IN A NONVOLATILE MEMORY USING A  
PROTECTIVE LAYER

**PETITION UNDER 37 C.F.R. §1.183 TO CORRECT****ASSIGNEE NAME ON LETTERS PATENT**

Mail Stop Petition  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This petition under 37 C.F.R. §1.183 is being filed requesting that the requirements of 37 C.F.R. §3.81 be waived.

37 C.F.R. §3.81(a) permits a patent to issue to an assignee, provided that at the time the issue fee is paid, the assignment has been submitted for recordation and the name of the assignee is provided. A copy of an assignment ("First Assignment") between the inventors of the above-indicated application and Advanced Micro Devices, Inc., with a reel number of 012800 and a frame number of 0675 is enclosed herewith. The First Assignment indicates that Advanced Micro Devices, Inc. is the assignee of the above-indicated application. A copy of a subsequent assignment ("Second Assignment") between the inventors of the above-indicated application and Advanced Micro Devices, Inc. and Fujitsu Limited, with a reel number of 013405 and a frame number of 0255 is enclosed herewith. The Second Assignment indicates that Advanced Micro Devices, Inc. and Fujitsu Limited are the assignees of the above-indicated application. A copy of a subsequent assignment ("Third Assignment" between Advanced Micro Devices, Inc. and Fujitsu Limited (assignors) and FASL LLC (assignee), with a reel number of 015870 and a frame

number of 0041 is enclosed herewith. The Third Assignment indicates that FASL LLC is the assignee of the above-indicated application. The above assignments (First, Second and Third Assignments) were all submitted for recordation before the issuance of the above-indicated application. A copy of a document ("Name Change Document") that indicates that FASL LLC changed their name to Spansion LLC is enclosed herewith. Accordingly, the correct assignee in the above-indicated application is "Spansion LLC." Applicants respectfully petition that the name of the correct Assignee is only "Spansion LLC" which is evidenced by the assignments and name change document mentioned above.

The Issue Fee was prepared and filed on May 17, 2005 with the name of Advanced Micro Devices, Inc. as the indicated Assignee. Failure to include the correct assignee name on the PTOL 85B was inadvertent.

The Director is authorized to debit the petition fee under 37 C.F.R. §1.17(f) in the amount of \$400.00 to Deposit Account No. 23-2426 of Winstead Sechrest & Minick P.C. The Director is additionally authorized to debit this Deposit Account Number if there are any further fees due under this paper.

Applicants respectfully request that Applicants' attorney be called at the below listed number if it is believed that such a discussion would be helpful in resolving any issues.

Respectfully submitted,

WINSTEAD SECHREST & MINICK P.C.

Attorneys for Applicants

By: 

Robert A. Voigt, Jr.  
Reg. No. 47,159

P.O. Box 50784  
Dallas, Texas 75201  
Phone: 512.370.2832  
Fax: 214.745.5390



UNITED STATES PATENT AND TRADEMARK OFFICE

AMD  
2236 P  
JRM  
P046US

RECEIVED ON

OCT 21 2005

BY WINSTAD

DOCKETED ON

OCT 24 2005

*previously docketed*  
By: RMT (184/P046US)

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
P.O. Box 1450  
ALEXANDRIA, VA 22313-1450  
WWW.USPTO.GOV

Paper No. None

SAWYER LAW GROUP LLP  
P.O. Box 51418  
Palo Alto CA 94303



COPY MAILED

OCT 07 2005

OFFICE OF PETITIONS

In re Application of  
Angela Hui et al.  
Application No. 10/032,757  
Filed: December 27, 2001  
Attorney Docket Number:  
G0728/2236P  
Title: METHOD AND SYSTEM FOR  
FORMING DUAL GATE STRUCTURES IN  
A NONVOLATILE MEMORY USING A  
PROTECTIVE LAYER

DECISION ON PETITION UNDER  
37 C.F.R. §3.81(B)

This is a decision on the petition under 37 C.F.R. §1.182, filed May 26, 2005, which is properly treated as a petition pursuant to 37 C.F.R. §3.81(b)<sup>1</sup>, to correct the Assignee's information on the Issue Fee Transmittal Form PTOL-85(b).

Petitioner states that a typographical error appears on form PTOL-85(b), and that an assignee's name was not listed properly.

37 CFR 3.81(b), effective June 25, 2004, reads:

(b) After payment of the issue fee: Any request for issuance of an application in the name of the assignee submitted after the date of payment of the issue fee, and any request for a patent to be corrected to state the name of the assignee, must state that the assignment was submitted for recordation as set forth in 3.11 before issuance of the patent, and must include a request for a certificate of correction under 1.323 of this chapter (accompanied by the fee set forth in 1.20(a)) and the processing fee set forth in 1.17(i) of this chapter.

<sup>1</sup> See Official Gazette, June 22, 2004.

The present request under 37 CFR 3.81(b) was not accompanied by either a request for a certificate of correction (and fee) as required by 3.81(b), or a copy of the notice of recordation of the assignment document. As petitioner has failed to comply with the provisions of this title, the request cannot be granted.

Hence, the petition is **DISMISSED**.

It is not clear if the assignment was submitted for recordation as set forth in 37 C.F.R. §3.11 before the issuance of this patent. Therefore, on renewed petition, Petitioner should submit the reel and frame number for this recordation, as well as the request for a certificate of correction and the appropriate fees (\$130 and \$100).

Any reply must be submitted within **TWO (2) MONTHS** from the mail date of this decision. Extensions of time under 37 C.F.R. §1.136(a) are permitted. The reply should include a cover letter entitled "Renewed Petition Under 37 C.F.R. 3.81(b)". This is not a final agency action within the meaning of 5 U.S.C 704.

The renewed petition should indicate in a prominent manner that the attorney handling this matter is Paul Shanowski, and may be submitted by mail<sup>2</sup>, hand-delivery<sup>3</sup>, or facsimile<sup>4</sup>.

Telephone inquiries regarding *this decision* should be directed to the undersigned at (571) 272-3225. Any questions concerning the issuance of a certificate of correction should be directed to the Certificates of Correction Branch at (703) 305-8309.

It is noted that the address listed on the petition differs from the address of record. The application file does not indicate a change of correspondence address has been filed in this case, although the address given on the petition differs from the address of record. If petitioner desires to receive future correspondence regarding this application, the change of correspondence address must be submitted. A courtesy copy of this decision will be mailed to petitioner. However, all future correspondence will be directed to the address of record until such time as appropriate instructions are received to the contrary. Petitioner will not receive future correspondence unless a Change of Correspondence Address Form (PTO/SB/122) is

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2 Mail Stop Petition, Commissioner for Patents, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA, 22313-1450.

3 Customer Window, Randolph Building, 401 Dulany Street, Alexandria, VA, 22314.

4 (571) 273-8300 - please note this is a central facsimile number.

submitted for the above-identified application. A blank Change of Correspondence Address Form (PTO/SB/122) may be found at <http://www.uspto.gov/web/forms/sb0122.pdf>.



**Paul Shanowski**  
**Senior Attorney**  
**Office of Petitions**  
**United States Patent and Trademark Office**

cc: KORDZIK, KELLY  
Winstead Sechrest and Minick PC  
P.O. Box 50784  
Dallas, TX 75201



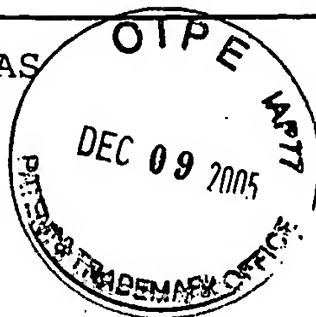
JUN 25 2002

JRM AMO 2236P

JUNE 17, 2002

SAWYER LAW GROUP LLP  
JOSEPH A. SAWYER, JR  
PO BOX 51418  
PALO ALTO, CA 94303

PTAS



Chief Information Officer  
Washington, DC 20231  
www.uspto.gov



\*102062424A\*

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 04/11/2002

REEL/FRAME: 012800/0675  
NUMBER OF PAGES: 6

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

HUI, ANGELA

DOC DATE: 03/06/2002

ASSIGNOR:

FANG, SHENGQUING

DOC DATE: 03/22/2002

ASSIGNOR:

KINOSHITA, HIROYUKI

DOC DATE: 03/22/2002

ASSIGNOR:

KO, KELWIN

DOC DATE: 03/22/2002

ASSIGNOR:

LI, WENMEI

DOC DATE: 03/18/2002

ASSIGNOR:

SUN, YU

DOC DATE: 03/22/2002

ASSIGNOR:

OGAWA, HIROYUKI

DOC DATE: 03/22/2002

012800/0675 PAGE 2

• ASSIGNOR:  
CHANG, CHI

DOC DATE: 03/22/2002

ASSIGNEE:  
ADVANCED MICRO DEVICES, INC.  
1 AMD PLACE  
SUNNYVALE, CALIFORNIA 94086

SERIAL NUMBER: 10032757  
PATENT NUMBER:

FILING DATE: 12/27/2001  
ISSUE DATE:

STEVEN POST, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

04-22-2002

Attorney Docket: G0728/2236P

RECORDATION FORM COVER SHEET  
PATENTS ONLY



US Department of Commerce  
Patent & Trademark Office

102062424

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of Conveying party(ies)

Angela HUI  
Shengqing FANG  
Hiroyuki KINOSHITA  
Kelwin KO  
Wenmei LI  
Yu SUN  
Hiroyuki OGAWA  
Chi CHANG

4-11-02

Additional name(s) of conveying party(ies)  
attached? ☐ Yes ☒ No

2. Name and address of receiving party(ies)

Advanced Micro Devices, Inc.  
Street Address: 1 AMD Place  
City: Sunnyvale State: CA Zip: 94086

Additional name(s) & address(es) of receiving party(ies)  
attached? ☐ Yes ☒ No

3. Nature of conveyance:

☒ Assignment

Execution Dates: March 6, 2002 March 18, 2002  
March 22, 2002 March 22, 2002  
March 22, 2002 March 22, 2002  
March 22, 2002 March 22, 2002

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No.(s)  
10/032,757, filed December 27, 2001

Additional numbers attached? ☐ Yes ☒ No

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom  
correspondence concerning document  
should be mailed:

Name: Joseph A. Sawyer, Jr.  
Internal  
Address: Sawyer Law Group LLP  
Street  
Address: P.O. Box 51418  
Palo Alto, California 94303

6. Total Number of applications and patents  
involved: One

7. Total fee (37 CFR 3.41).....\$ 40.00

☐ Enclosed

☒ Authorized to be charged to Deposit Account

8. Deposit Account Number: 01-0365 (AMD, Inc.)  
(Attach copy of this page)

04/22/2002 TDIAZ1 00000016 010365 10032757

01 FC:581

40.00 CH

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

March 28, 2002

Date

Joseph A. Sawyer, Jr., Reg. No. 30,801

Total number of pages including cover sheet, attachments, and document: 6



## **ASSIGNMENT**

WHEREAS, the undersigned, **Angela HUI, Shenqing FANG, Hiroyuki KINOSHITA, Kelwin KO, Wenmei LI, Yu SUN, Hiroyuki OGAWA, and Chi CHANG** (herein after called the Assignor), has invented certain new and useful improvements in

### **METHOD AND SYSTEM FOR FORMING DUAL GATE STRUCTURES IN A NONVOLATILE MEMORY USING A PROTECTIVE LAYER**

for which a United States patent application has been concurrently executed on the date of this assignment.

WHEREAS, **ADVANCED MICRO DEVICES, INC.**, a corporation of the State of Delaware, having a place of business at 901 Thompson Place, P.O. Box 3453, Sunnyvale, California, 94088-3453 (hereinafter termed Assignee), is desirous of acquiring the entire right, title and interest in and to said application and said invention and improvements thereon, and in and to Letters Patents thereon when granted in the United States and foreign countries.

NOW, THEREFORE, for good and valuable consideration received by said Assignors from said Assignee, the receipt of which is hereby acknowledged by said Assignors:

1. Said Assignors do hereby sell, assign, transfer and convey unto said Assignee, the entire right, title and interest in and to said application and said invention and in and to any and all improvements on said invention and in and to any and all improvements on said invention heretofore or hereafter made or acquired by said Assignors; and in and to any and all Letters Patent on said invention and/or said improvements that may be granted in the United States or any foreign country, including each and every Letters Patent granted on any application which is a division, continuation, substitution, renewal, or continuation-in-part of any said application, and in and to each and every reissue or extension of said Letters Patent.
2. Said Assignors hereby covenant and agree to cooperate with said Assignee where said Assignee may enjoy to the fullest extent the right, title and interest herein conveyed. Such cooperation shall include (a) prompt execution of all papers (prepared at the expense of Assignee) which are deemed necessary or desirable by Assignee to perfect in it the right, title and interest herein conveyed, (b) prompt execution of all petitions, oaths, specifications or other papers (prepared at the expense of Assignee) which are deemed necessary or desirable by assignee for prosecuting said application, for filing and prosecuting divisional, continuation, substitution, renewal, continuation-in-part, or additional applications in the United States and/or foreign countries covering said invention and/or said improvements, for filing and prosecuting applications for reissuance of letters patent included herein, or for interference proceedings involving said invention and/or said improvements and (c) prompt assistance and cooperation in the prosecution of interference proceedings involving said invention and/or said improvements and in the adjudication of said Letters Patent, particularly by the disclosure of facts and the production of evidence relating to said invention and/or said improvements, provided the expenses which may be incurred by said Assignors in lending such assistance and cooperation shall be paid by the Assignee.
3. The terms, covenants and conditions of this assignment shall inure to the benefit of said Assignee, its successors, assigns and/or other legal representatives and shall be binding upon said Assignors, their heirs, legal representatives and assigns.
4. Said Assignors hereby warrant and represent that he has not entered into any assignment, contract or understanding in conflict herewith.

**ASSIGNMENT** (continued)

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3/6/02  
Date

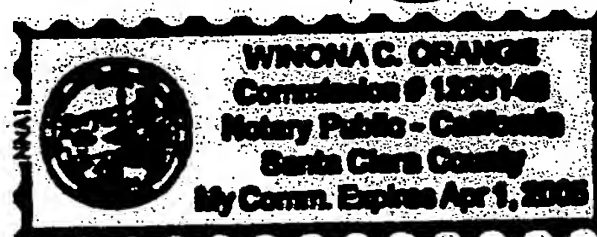
Angela T. HUI  
Angela HUI

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On March 6, 2002 before me, WINONA C. ORANGE, Notary Public, personally appeared Angela HUI, ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Winona C. Orange  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3/22/2002  
Date

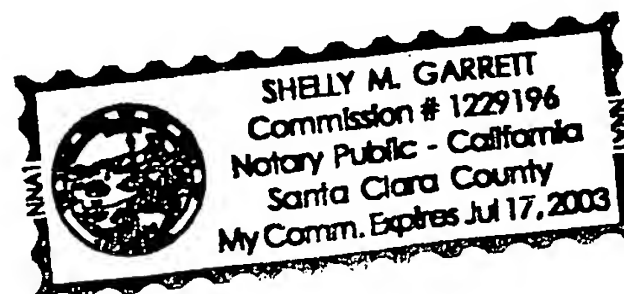
Shenqing FANG  
Shenqing FANG

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On March 22, 2002 before me, Shelly M. Garrett, Notary Public, personally appeared Shenqing FANG, ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Shelly M. Garrett  
Signature



**ASSIGNMENT** (continued)

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

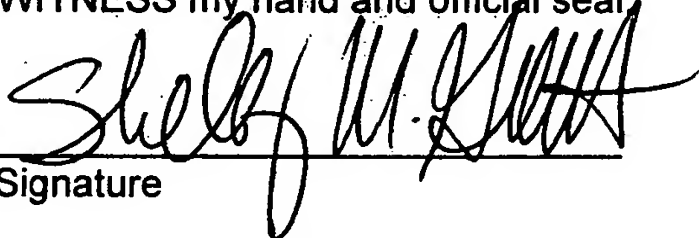
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Date

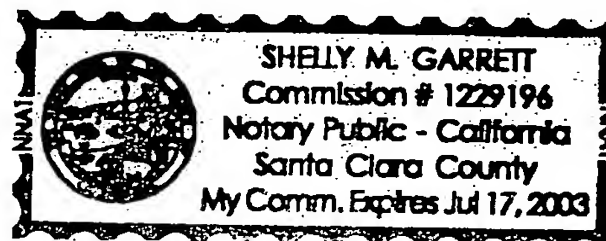
  
Hiroyuki KINOSHITA

STATE OF CALIFORNIA           )  
  )ss.  
COUNTY OF SANTA CLARA    )

On March 22, 2002 before me, Shelly M. Garrett, Notary Public, personally appeared Hiroyuki KINOSHITA, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.


WITNESS my hand and official seal.

  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

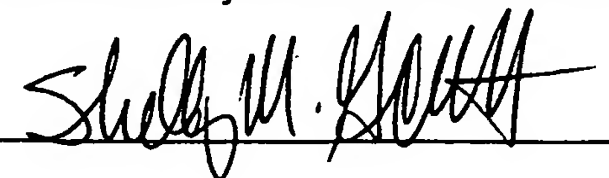
3/22/02  
Date

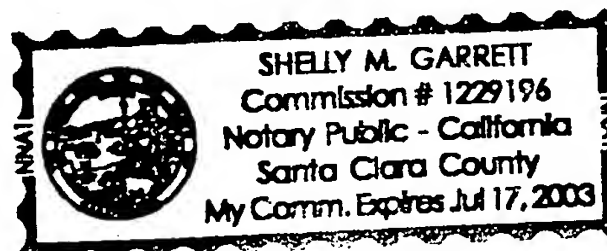
  
Kelwin KO

STATE OF CALIFORNIA           )  
  )ss.  
COUNTY OF SANTA CLARA    )

On March 22, 2002 before me, Shelly M. Garrett, Notary Public, personally appeared Kelwin KO, ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(~~s~~) whose name(~~s~~) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(~~ies~~), and that by his signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

WITNESS my hand and official seal.





**ASSIGNMENT** (continued)

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3/18/02  
Date

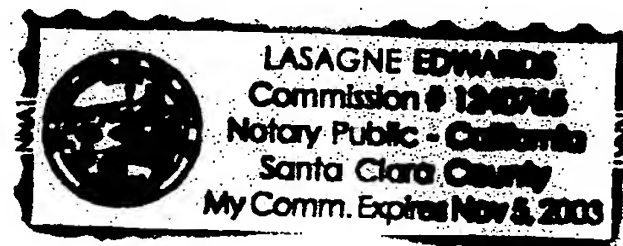
Wenmei Li  
Wenmei LI

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On March 18, 2002, ~~2001~~ before me, Lasagne Edwards Notary Public, personally appeared Wenmei LI, ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Lasagne Edwards  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3/22/02  
Date

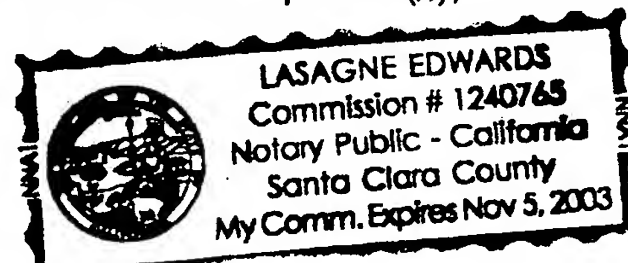
Yu SUN  
Yu SUN

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On March 22, <sup>2</sup>~~2001~~ before me, Lasagne Edwards Notary Public, personally appeared Yu SUN, ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Lasagne Edwards  
Signature



**ASSIGNMENT** (continued)

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3 / 22 / 02  
Date

H. Ogawa  
Hiroyuki OGAWA

STATE OF CALIFORNIA           )  
  )ss.  
COUNTY OF SANTA CLARA    )

On \_\_\_\_\_, 2001 before me, \_\_\_\_\_, Notary Public, personally appeared Hiroyuki OGAWA, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3/22/02  
Date

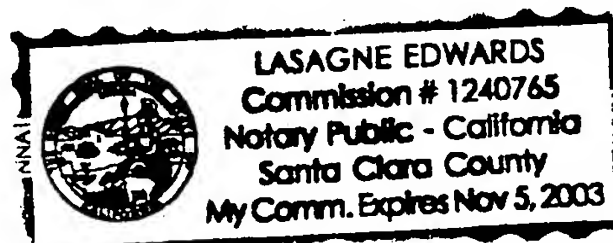
Chi Chang  
Chi CHANG

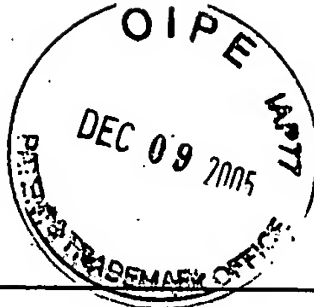
STATE OF CALIFORNIA           )  
  )ss.  
COUNTY OF SANTA CLARA    )

On March 22, 200<sup>3</sup>, before me, Lasagne Edwards, Notary Public, personally appeared Chi CHANG, ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Lasagne Edwards  
Signature





AF01111

AMD 2236P

FEBRUARY 05, 2003

PTAS

Under Secretary of Commerce For Intellectual Property and  
Director of the United States Patent and Trademark Office  
Washington, DC 20231  
www.uspto.gov

SAWYER LAW GROUP LLP  
JOSEPH A. SAWYER, JR.  
P.O. BOX 51418  
PALO ALTO, CA 94303



\*102260910A\*

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 10/15/2002

REEL/FRAME: 013405/0255  
NUMBER OF PAGES: 12

BRIEF: CORRECTIVE ASSIGNMENT PREVIOUSLY RECORDED AT REEL 012800 FRAME 0675. (ASSIGNMENT OF ASSIGNOR'S INTEREST)

## ASSIGNOR:

HUI, ANGELA T.

DOC DATE: 09/26/2002

## ASSIGNOR:

FANG, SENGQUING

DOC DATE: 08/01/2002

## ASSIGNOR:

KINOSHITA, HIROYUKI

DOC DATE: 08/01/2002

## ASSIGNOR:

KO, KELWIN

DOC DATE: 08/01/2002

## ASSIGNOR:

LI, WENMEI

DOC DATE: 08/01/2002

## ASSIGNOR:

SUN, YU

DOC DATE: 08/01/2002

## ASSIGNOR:

OGAWA, HIROYUKI

DOC DATE: 09/12/2002

013405/0255 PAGE 2

ASSIGNOR:  
CHANG, CHI

DOC DATE: 08/01/2002

ASSIGNEE:  
ADVANCED MICRO DEVICES, INC.  
1 AMD PLACE  
SUNNYVALE, CALIFORNIA 94088-3453

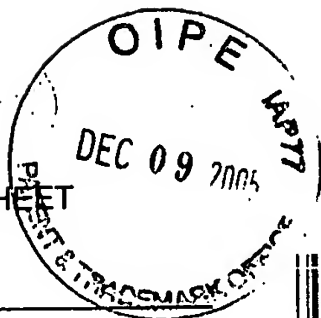
ASSIGNEE:  
FUJITSU LIMITED  
1-1 KAMIKODANAKA, 4-CHOME  
NAKAHARA-KU KAWASAKI-SHI  
KANAGAWA, 211-88, JAPAN

SERIAL NUMBER: 10032757  
PATENT NUMBER:

FILING DATE: 12/27/2001  
ISSUE DATE:

MARCUS KIRK, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

RECORDATION FORM COVER SHEET  
PATENTS ONLY



10-25-2002



102260910

Attorney Docket: AF01171/2236P

US Department of Commerce  
Patent & Trademark Office

To the Honorable Commissioner of Patents and Tr

ial documents or copy thereof.

1. Name of Conveying party(ies)

- (1) Angela T. HUI
- (2) Sengquing FANG
- (3) Hiroyuki KINOSHITA
- (4) Kelwin KO
- (5) Wenmei LI
- (6) Yu SUN
- (7) Hiroyuki OGAWA
- (8) Chi CHANG

10-15-02

2. Name and address of receiving party(ies)

Advanced Micro Devices, Inc.  
1 AMD Place  
Sunnyvale, CA 94088-3453

Fujitsu Limited  
1-1 Kamikodanaka, 4-chome  
Nakahara-ku Kawasaki-shi  
Kanagawa, 211-88, Japan

Additional name(s) of conveying party(ies)  
attached? ☐ Yes ☒ No

3. Nature of conveyance:

☒ Assignment Correction,  
Reel/Frame: 012800/0675

Execution Dates: (1) September 26, 2002 (5) August 1, 2002  
(2) August 1, 2002 (6) August 1, 2002  
(3) August 1, 2002 (7) September 12, 2002  
(4) August 1, 2002 (8) August 1, 2002

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No.(s)  
10/032,757, filed December 27, 2001

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom  
correspondence concerning document  
should be mailed:

Name: Joseph A. Sawyer, Jr.  
Internal  
Address: Sawyer Law Group LLP  
Street  
Address: P.O. Box 51418  
Palo Alto, California 94303

6. Total Number of applications and patents  
involved: One

7. Total fee (37 CFR 3.41).....\$ 40.00  
☐ Enclosed  
☒ Authorized to be charged to Deposit Account

8. Deposit Account Number: 02-2120 (Sawyer Law Group LLP)  
(Attach copy of this page)

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

October 9, 2002

Stephen G. Sullivan, Reg. No. 38,329

10/24/2002 DATE 00000094 022120 10032757

01 FC:8021

40.00 CH

Total number of pages including cover sheet, attachments, and document: 6



04-22-2002

Attorney Docket: G0728/2236P

RECORDATION FORM COVER SHEET  
PATENTS ONLY



102062424

US Department of Commerce  
Patent & Trademark Office

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of Conveying party(ies)

Angela HUI  
Shengqing FANG  
Hiroyuki KINOSHITA  
Kelwin KO  
Wenmei LI  
Yu SUN  
Hiroyuki OGAWA  
Chi CHANG

2. Name and address of receiving party(ies)

Advanced Micro Devices, Inc.  
Street Address: 1 AMD Place  
City: Sunnyvale State: CA Zip: 94086

Additional name(s) of conveying party(ies)  
attached? ☐ Yes ☒ No

Additional name(s) & address(es) of receiving party(ies)  
attached? ☐ Yes ☒ No

3. Nature of conveyance:

☒ Assignment

Execution Dates: March 6, 2002 March 18, 2002  
March 22, 2002 March 22, 2002  
March 22, 2002 March 22, 2002  
March 22, 2002 March 22, 2002

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No.(s)  
10/032,757, filed December 27, 2001

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom  
correspondence concerning document  
should be mailed:

Name: Joseph A. Sawyer, Jr.  
Internal  
Address: Sawyer Law Group LLP  
Street  
Address: P.O. Box 51418  
Palo Alto, California 94303

6. Total Number of applications and patents  
involved: One

7. Total fee (37 CFR 3.41).....\$ 40.00

☐ Enclosed

☒ Authorized to be charged to Deposit Account

8. Deposit Account Number: 01-0365 (AMD, Inc.)  
(Attach copy of this page)

1/22/2002 TDIAZ1 00000016 010365 10032757

FC:581

9.

40.00 CH  
Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

March 28, 2002

Date

Joseph A. Sawyer, Jr., Reg. No. 30,801

Total number of pages including cover sheet, attachments, and document: 6

## **ASSIGNMENT**

WHEREAS, the undersigned, Angela HUI, Shenqing FANG, Hiroyuki KINOSHITA, Kelwin KO, Wenmei LI, Yu SUN, Hiroyuki OGAWA, and Chi CHANG (herein after called the Assignor), has invented certain new and useful improvements in

### **METHOD AND SYSTEM FOR FORMING DUAL GATE STRUCTURES IN A NONVOLATILE MEMORY USING A PROTECTIVE LAYER**

for which a United States patent application has been concurrently executed on the date of this assignment.

WHEREAS, ADVANCED MICRO DEVICES, INC., a corporation of the State of Delaware, having a place of business at 901 Thompson Place, P.O. Box 3453, Sunnyvale, California, 94088-3453 (hereinafter termed Assignee), is desirous of acquiring the entire right, title and interest in and to said application and said invention and improvements thereon, and in and to Letters Patents thereon when granted in the United States and foreign countries.

NOW, THEREFORE, for good and valuable consideration received by said Assignors from said Assignee, the receipt of which is hereby acknowledged by said Assignors:

1. Said Assignors do hereby sell, assign, transfer and convey unto said Assignee, the entire right, title and interest in and to said application and said invention and in and to any and all improvements on said invention and in and to any and all improvements on said invention heretofore or hereafter made or acquired by said Assignors; and in and to any and all Letters Patent on said invention and/or said improvements that may be granted in the United States or any foreign country, including each and every Letters Patent granted on any application which is a division, continuation, substitution, renewal, or continuation-in-part of any said application, and in and to each and every reissue or extension of said Letters Patent.
2. Said Assignors hereby covenant and agree to cooperate with said Assignee where said Assignee may enjoy to the fullest extent the right, title and interest herein conveyed. Such cooperation shall include (a) prompt execution of all papers (prepared at the expense of Assignee) which are deemed necessary or desirable by Assignee to perfect in it the right, title and interest herein conveyed, (b) prompt execution of all petitions, oaths, specifications or other papers (prepared at the expense of Assignee) which are deemed necessary or desirable by assignee for prosecuting said application, for filing and prosecuting divisional, continuation, substitution, renewal, continuation-in-part, or additional applications in the United States and/or foreign countries covering said invention and/or said improvements, for filing and prosecuting applications for reissuance of letters patent included herein, or for interference proceedings involving said invention and/or said improvements and (c) prompt assistance and cooperation in the prosecution of interference proceedings involving said invention and/or said improvements and in the adjudication of said Letters Patent, particularly by the disclosure of facts and the production of evidence relating to said invention and/or said improvements, provided the expenses which may be incurred by said Assignors in lending such assistance and cooperation shall be paid by the Assignee.
3. The terms, covenants and conditions of this assignment shall inure to the benefit of said Assignee, its successors, assigns and/or other legal representatives and shall be binding upon said Assignors, their heirs, legal representatives and assigns.
4. Said Assignors hereby warrant and represent that he has not entered into any assignment, contract or understanding in conflict herewith.

**ASSIGNMENT (continued)**

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3/6/02  
Date

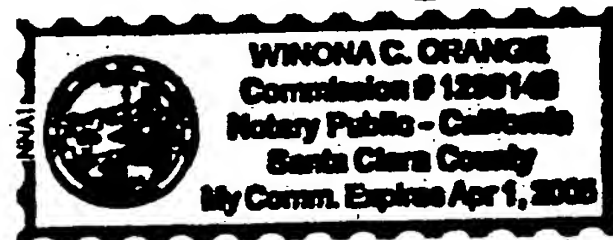
Angela T. Hui  
Angela HUI

STATE OF CALIFORNIA           )  
  )ss.  
COUNTY OF SANTA CLARA    )

On March 6, 2002 before me, WINONA C. ORANGE, Notary Public, personally appeared Angela HUI, ~~personally known to me (or proved to me on the basis of satisfactory evidence)~~ to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that ~~he~~ executed the same in ~~his~~ authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Winona C. Orange  
Signature



her

She

her

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3/22/2002  
Date

Shenqing Fang  
Shenqing FANG

STATE OF CALIFORNIA           )  
  )ss.  
COUNTY OF SANTA CLARA    )

On March 22, 2002 before me, Shelly M. Garrett, Notary Public, personally appeared Shenqing FANG, ~~personally known to me (or proved to me on the basis of satisfactory evidence)~~ to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Shelly M. Garrett  
Signature



**ASSIGNMENT** (continued)

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

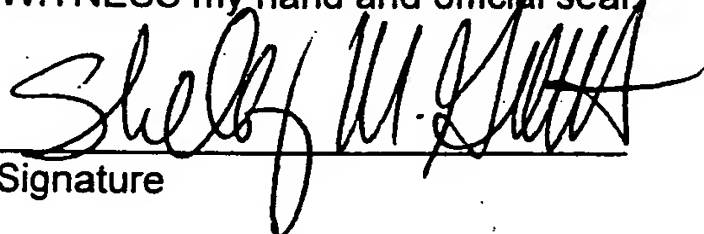
3/22/02  
Date

  
Hiroyuki KINOSHITA

STATE OF CALIFORNIA           )  
  )ss.  
COUNTY OF SANTA CLARA    )

On March 22, 2002 before me, Shelly M. Garrett, Notary Public, personally appeared Hiroyuki KINOSHITA, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.


WITNESS my hand and official seal.

  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

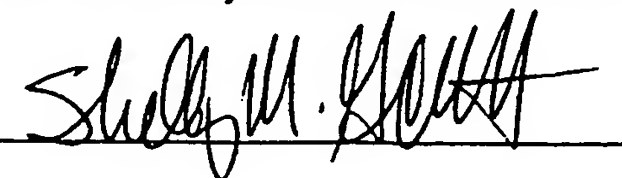
3/22/02  
Date

  
Kelwin KO

STATE OF CALIFORNIA           )  
  )ss.  
COUNTY OF SANTA CLARA    )

On March 22, 2002 before me, Shelly M. Garrett, Notary Public, personally appeared Kelwin KO, ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.





ASSIGNMENT (continued)

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3/18/02  
Date

Wenmei Li  
Wenmei LI

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On March 18, 2002, ~~2001~~ before me, Lasagne Edwards Notary Public, personally appeared Wenmei LI, ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Lasagne Edwards  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3/22/02  
Date

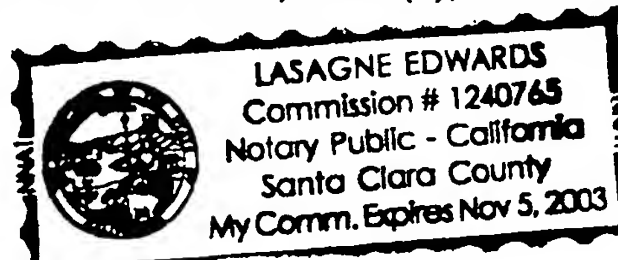
Yu SUN  
Yu SUN

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On March 22, 200<sup>2</sup>1 before me, Lasagne Edwards Notary Public, personally appeared Yu SUN, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Lasagne Edwards  
Signature



**ASSIGNMENT (continued)**

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3 / 22 / 02  
Date

H. Ogawa  
Hiroyuki OGAWA

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On \_\_\_\_\_, 2001 before me, \_\_\_\_\_, Notary Public, personally appeared Hiroyuki OGAWA, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

\_\_\_\_\_  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

3/22/02  
Date

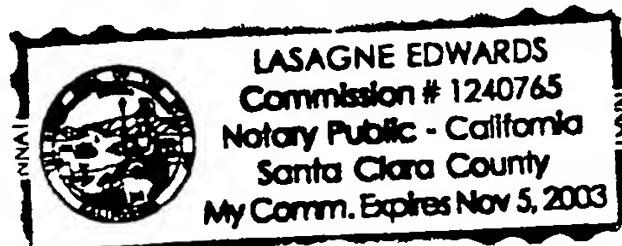
Chi Chang  
Chi CHANG

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On March 22, 200<sup>1</sup>, before me, Lasagne Edwards, Notary Public, personally appeared Chi CHANG, ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(~~s~~) whose name(~~s~~) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(~~ies~~), and that by his signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

WITNESS my hand and official seal.

Lasagne Edwards  
Signature





## **ASSIGNMENT**

WHEREAS, the undersigned, **Angela T. HUI, Shengquing FANG, Hiroyuki KINOSHITA, Kelwin KO, Wenmei LI, Yu SUN, and Hiroyuki OGAWA**, and **Chi CHANG** (herein after called the Assignor), has invented certain new and useful improvements in

### **METHOD AND SYSTEM FOR FORMING DUAL GATE STRUCTURES IN A NONVOLATILE MEMORY USING A PROTECTIVE LAYER**

for which a United States patent application was filed December 27, 2001, and assigned serial no. 10/032,757.

WHEREAS, **ADVANCED MICRO DEVICES, INC.**, a corporation of the State of Delaware, having a place of business at 1 AMD Place, Sunnyvale, CA, 94088-3453; and **Fujitsu Limited**, having a place of business at 1-1 Kamikodanaka, 4-chome, Nakahara-ku Kawasaki-shi, Kanagawa, 211-88, Japan (hereinafter termed Assignees), is desirous of acquiring the entire right, title and interest in and to said application and said invention and improvements thereon; and in and to Letters Patents thereon when granted in the United States and foreign countries.

NOW, THEREFORE, for good and valuable consideration received by said Assignors from said Assignees, the receipt of which is hereby acknowledged by said Assignors:

1. Said Assignors do hereby sell, assign, transfer and convey unto said Assignees, the entire right, title and interest in and to said application and said invention and in and to any and all improvements on said invention and in and to any and all improvements on said invention heretofore or hereafter made or acquired by said Assignors; and in and to any and all Letters Patent on said invention and/or said improvements that may be granted in the United States or any foreign country, including each and every Letters Patent granted on any application which is a division, continuation, substitution, renewal, or continuation-in-part of any said application, and in and to each and every reissue or extension of said Letters Patent.
2. Said Assignors hereby covenant and agree to cooperate with said Assignees where said Assignees may enjoy to the fullest extent the right, title and interest herein conveyed. Such cooperation shall include (a) prompt execution of all papers (prepared at the expense of Assignees) which are deemed necessary or desirable by Assignee to perfect in it the right, title and interest herein conveyed, (b) prompt execution of all petitions, oaths, specifications or other papers (prepared at the expense of Assignees) which are deemed necessary or desirable by assignees for prosecuting said application, for filing and prosecuting divisional, continuation, substitution, renewal, continuation-in-part, or additional applications in the United States and/or foreign countries covering said invention and/or said improvements, for filing and prosecuting applications for reissuance of letters patent included herein, or for interference proceedings involving said invention and/or said improvements and (c) prompt assistance and cooperation in the prosecution of interference proceedings involving said invention and/or said improvements and in the adjudication of said Letters Patent, particularly by the disclosure of facts and the production of evidence relating to said invention and/or said improvements, provided the expenses which may be incurred by said Assignors in lending such assistance and cooperation shall be paid by the Assignees.
3. The terms, covenants and conditions of this assignment shall inure to the benefit of said Assignees, its successors, assigns and/or other legal representatives and shall be binding upon said Assignors, their heirs, legal representatives and assigns.
4. Said Assignors hereby warrant and represent that he has not entered into any assignment, contract or understanding in conflict herewith.

**ASSIGNMENT** (continued)

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

9/26/02  
Date

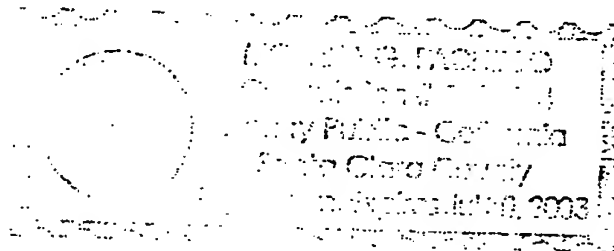
Angela T. HUI  
Angela T. HUI

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On September 26, 2002 before me, Morena G. Pacheco, Notary Public, personally appeared Angela T. HUI, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that <sup>her</sup>he executed the same in <sup>her</sup>his authorized capacity(ies), and that by <sup>her</sup>his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Morena G. Pacheco  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

8/1/2002  
Date

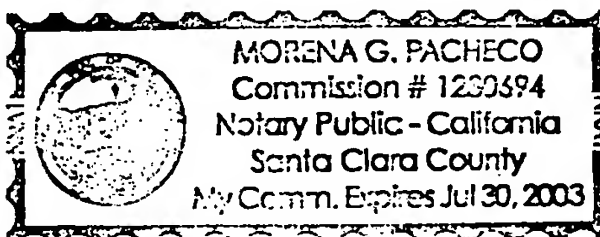
Shenqing FANG  
Shenqing FANG

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On August 1st, 2002 before me, Morena G. Pacheco, Notary Public, personally appeared Shenqing FANG, ~~personally known to me~~ (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Morena G. Pacheco  
Signature





**ASSIGNMENT** (continued)

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

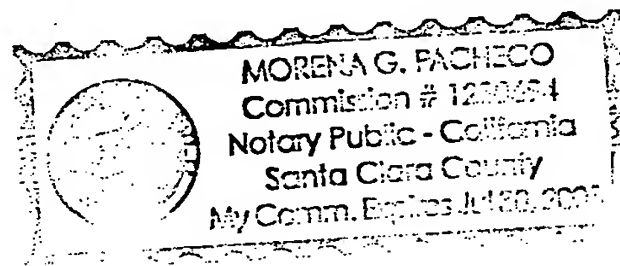
Date Aug 1, 2002 Hiroyuki KINOSHITA  
Hiroyuki KINOSHITA

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On August 1st, 2002 before me, Morena G. Pacheco, Notary Public, personally appeared Hiroyuki KINOSHITA, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Morena G. Pacheco  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

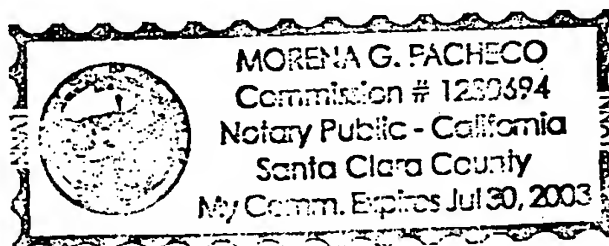
Date Aug 1, 2002 Kelwin KO  
Kelwin KO

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On August 1st, 2002 before me, Morena G. Pacheco, Notary Public, personally appeared Kelwin KO, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Morena G. Pacheco



**ASSIGNMENT (continued)**

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

08/01/02  
Date

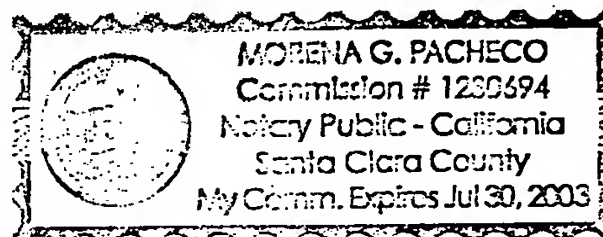
Wenmei LI  
Wenmei LI

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On August 1st, 2002 before me, Morena G. Pacheco, Notary Public, personally appeared Wenmei LI, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Morena G. Pacheco  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

Aug 1, 2002  
Date

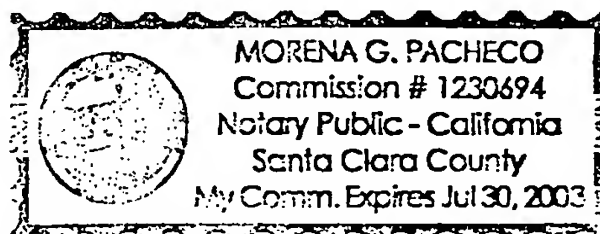
Yu SUN  
Yu SUN

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On August 1st, 2002 before me, Morena G. Pacheco, Notary Public, personally appeared Yu SUN, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Morena G. Pacheco  
Signature



ASSIGNMENT (continued)

IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

9 / 12 / 02  
Date

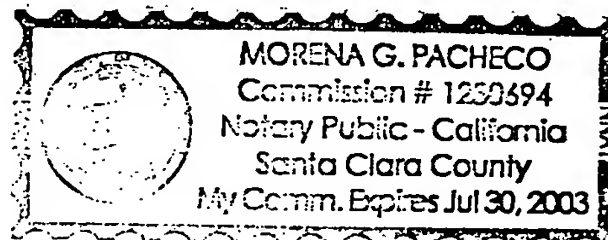
H. Ogawa  
Hiroyuki OGAWA

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On September 12, 2002 before me, Morena G. Pacheco, Notary Public, personally appeared Hiroyuki OGAWA, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Morena G. Pacheco  
Signature



IN WITNESS WHEREOF, the said Assignor has executed and delivered this instrument on the date set forth below.

Aug. 1, 2002  
Date

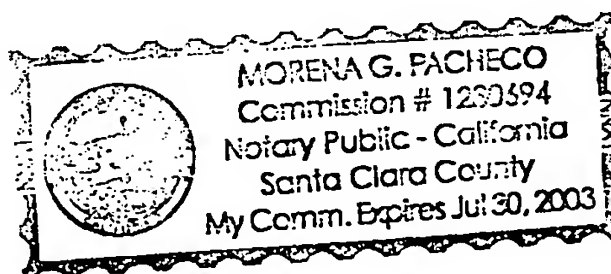
Chi Chang  
Chi CHANG

STATE OF CALIFORNIA )  
 )ss.  
COUNTY OF SANTA CLARA )

On August 1st, 2002 before me, Morena G. Pacheco, Notary Public, personally appeared Chi CHANG, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity(ies), and that by his signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Morena G. Pacheco  
Signature



**TRANSMITTAL FORM**Attorney Docket No.  
**AF01171/2236P**

In re the application Hui, et al.

Reel/Frame No: 012800/0675

Serial No: 10/032,757

Group Art Unit: 2811

Filed: December 27, 2001

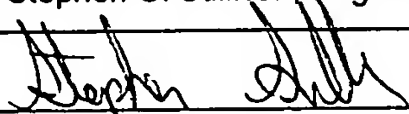
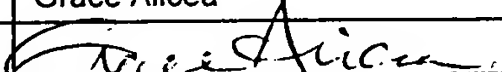
Examiner: To Be Assigned

**For: Method and System for Forming Dual Gate Structures in a Nonvolatile Memory Using a Protective Layer**U.S. Patent and Trademark Office  
Assignment Division  
Box: Assignments, CG-4  
1213 Jefferson Davis Hwy, Suite 320  
Washington, D.C. 20231**COMMUNICATION RE ASSIGNMENT CORRECTION**

Sir:

Applicant is requesting an Assignment correction. Enclosed is the new Recordation Cover Sheet and new Assignment that needs to be recorded. Also enclosed are copies of the original Assignment Recordation and accompanying papers as filed on March 28, 2002 and recorded under reel/frame no: 012800/0675.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account 02-2120 (Sawyer Law Group LLP). If any unresolved issues remain, please contact Applicant's attorney at the telephone number listed below.

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT  |  |
|---|--|
| Attorney Name   | Stephen G. Sullivan, Reg. No. 38,329 (650) 493-4540                                  |
| Signature   |   |
| Date  | October 9, 2002  |
| CERTIFICATE OF MAILING  |  |
| I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assignment Division, Box Assignments CG-4, 1213 Jefferson Davis Hwy, Suite 320, Washington, D.C. 20231 on October 9, 2002 |  |
| Type or printed name  | Grace Alicea   |
| Signature   |  |

## TRANSMITTAL FORM

Attorney Docket No.  
AF01171/2236P

In re the application Hui, et al.

Reel/Frame No: 012800/0675

Serial No: 10/032,757

Group Art Unit: 2811

Filed: December 27, 2001

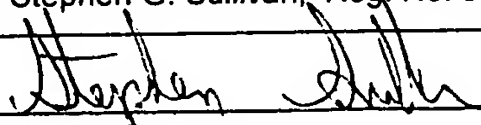
Examiner: To Be Assigned

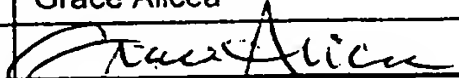
For: Method and System for Forming Dual Gate Structures in a Nonvolatile Memory Using a Protective Layer

| ENCLOSURES (check all that apply) |                                     |   |  |  |   |
|-----------------------------------|-------------------------------------|---|--|--|---|
| <input type="checkbox"/>          | Amendment/Reply                     | <input checked="" type="checkbox"/>   | New Assignment and Recordation Cover Sheet       | <input type="checkbox"/>   | After Allowance Communication to Group                            |
| <input type="checkbox"/>          | After Final                         | <input type="checkbox"/>  | Part B-Issue Fee Transmittal                     | <input type="checkbox"/>   | Appeal Communication to Board of Appeals and Interferences        |
| <input type="checkbox"/>          | Information disclosure statement    | <input type="checkbox"/>  | Letter to Draftsman                              | <input type="checkbox"/>   | Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) |
| <input type="checkbox"/>          | Form 1449                           | <input type="checkbox"/>  | Drawings   | <input type="checkbox"/>   | Status Letter   |
| <input type="checkbox"/>          | (X) Copies of References            | <input type="checkbox"/>  | Petition   | <input checked="" type="checkbox"/>  | Postcard  |
| <input type="checkbox"/>          | Extension of Time Request *         | <input type="checkbox"/>  | Fee Address Indication Form                      | <input checked="" type="checkbox"/>  | Other Enclosure(s) (please identify below):                       |
| <input type="checkbox"/>          | Express Abandonment                 | <input type="checkbox"/>  | Terminal Disclaimer                              | Communication re Assignment correction<br>Copy of Recorded Assignment Documents filed on March 28, 2002. |   |
| <input type="checkbox"/>          | Certified Copy of Priority Doc      | <input type="checkbox"/>  | Power of Attorney and Revocation of Prior Powers |  |   |
| <input type="checkbox"/>          | Response to Incomplete Appln        | <input type="checkbox"/>  | Change of Correspondence Address                 |  |   |
| <input type="checkbox"/>          | Response to Missing Parts           | *Extension of Term: Pursuant to 37 CFR 1.136, Applicant petitions the Commissioner to extend the time for response for xxxxxx month(s), from to . |  |  |   |
| <input type="checkbox"/>          | Executed Declaration by Inventor(s) |   |  |  |   |

| CLAIMS             |                                  |   |              |            |         |
|--------------------|----------------------------------|---|--------------|------------|---------|
| FOR                | Claims Remaining After Amendment | Highest # of Claims Previously Paid For | Extra Claims | RATE       | FEE     |
| Total Claims       | 0                                | 0                                       | 0            | \$18.00    | \$ 0.00 |
| Independent Claims | 0                                | 0                                       | 0            | \$84.00    | \$ 0.00 |
|                    |                                  |   |              | Total Fees | \$ 0.00 |

| METHOD OF PAYMENT                   |   |
|-------------------------------------|---|
| <input type="checkbox"/>            | Check no. _____ in the amount of \$ _____ is enclosed for payment of fees.  |
| <input type="checkbox"/>            | Charge \$ _____ to Deposit Account No. _____ (Account Holder Name) for payment of fees.                           |
| <input checked="" type="checkbox"/> | Charge any additional fees or credit any overpayment to Deposit Account No. <u>02-2120</u> (Sawyer Law Group LLP) |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |  |
|--|--|
| Attorney Name                              | Stephen G. Sullivan, Reg. No. 38,329   |
| Signature                                  |  |
| Date                                       | October 9, 2002  |

| CERTIFICATE OF MAILING   |  |
|--|--|
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| Type or printed name   | Grace Alicea   |
| Signature  |  |

## TRANSMITTAL FORM

Attorney Docket No.  
AF01171/2236P

In re the application Hui, et al.

Reel/Frame No: 012800/0675

Serial No: 10/032,757

Group Art Unit: 2811

Filed: December 27, 2001

Examiner: To Be Assigned

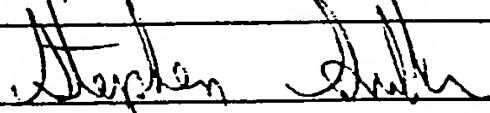
COPY

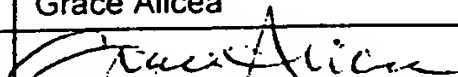
For: Method and System for Forming Dual Gate Structures in a Nonvolatile Memory Using a Protective Layer

| ENCLOSURES (check all that apply) |  |  |  |  |   |
|-----------------------------------|--|--|--|--|---|
| <input type="checkbox"/>          | Amendment/Reply  | <input checked="" type="checkbox"/>  | New Assignment and Recordation Cover Sheet       | <input type="checkbox"/>   | After Allowance Communication to Group                            |
| <input type="checkbox"/>          | <input type="checkbox"/> After Final                         | <input type="checkbox"/>   | Part B-Issue Fee Transmittal                     | <input type="checkbox"/>   | Appeal Communication to Board of Appeals and Interferences        |
| <input type="checkbox"/>          | Information disclosure statement                             | <input type="checkbox"/>   | Letter to Draftsman                              | <input type="checkbox"/>   | Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) |
| <input type="checkbox"/>          | <input type="checkbox"/> Form 1449                           | <input type="checkbox"/>   | Drawings   | <input type="checkbox"/>   | Status Letter   |
| <input type="checkbox"/>          | <input type="checkbox"/> (X) Copies of References            | <input type="checkbox"/>   | Petition   | <input checked="" type="checkbox"/>  | Postcard  |
| <input type="checkbox"/>          | Extension of Time Request *                                  | <input type="checkbox"/>   | Fee Address Indication Form                      | <input checked="" type="checkbox"/>  | Other Enclosure(s) (please identify below):                       |
| <input type="checkbox"/>          | Express Abandonment  | <input type="checkbox"/>   | Terminal Disclaimer                              | Communication re Assignment correction<br>Copy of Recorded Assignment Documents filed on March 28, 2002. |   |
| <input type="checkbox"/>          | Certified Copy of Priority Doc                               | <input type="checkbox"/>   | Power of Attorney and Revocation of Prior Powers |  |   |
| <input type="checkbox"/>          | Response to Incomplete Appln                                 | <input type="checkbox"/>   | Change of Correspondence Address                 |  |   |
| <input type="checkbox"/>          | Response to Missing Parts                                    | *Extension of Term: Pursuant to 37 CFR 1.136, Applicant petitions the Commissioner to extend the time for response for xxxxx month(s), from to . |  |  |   |
| <input type="checkbox"/>          | <input type="checkbox"/> Executed Declaration by Inventor(s) |  |  |  |   |

| CLAIMS             |                                  |   |              |            |         |
|--------------------|----------------------------------|---|--------------|------------|---------|
| FOR                | Claims Remaining After Amendment | Highest # of Claims Previously Paid For | Extra Claims | RATE       | FEE     |
| Total Claims       | 0                                | 0                                       | 0            | \$18.00    | \$ 0.00 |
| Independent Claims | 0                                | 0                                       | 0            | \$84.00    | \$ 0.00 |
|                    |                                  |   |              | Total Fees | \$ 0.00 |

| METHOD OF PAYMENT                   |  |
|-------------------------------------|--|
| <input type="checkbox"/>            | Check no. _____ in the amount of \$ _____ is enclosed for payment of fees.                                 |
| <input type="checkbox"/>            | Charge \$ _____ to Deposit Account No. _____ (Account Holder Name) for payment of fees.                    |
| <input checked="" type="checkbox"/> | Charge any additional fees or credit any overpayment to Deposit Account No. 02-2120 (Sawyer Law Group LLP) |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |   |
|--|---|
| Attorney Name                              | Stephen G. Sullivan, Reg. No. 38,329  |
| Signature                                  |  |
| Date                                       | October 9, 2002   |

| CERTIFICATE OF MAILING   |   |
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| Type or printed name   | Grace Alicea  |
| Signature  |  |



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JUNE 17, 2002

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Washington, DC 20231  
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PO BOX 51418  
PALO ALTO, CA 94303



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RECORDATION DATE: 04/11/2002

REEL/FRAME: 012800/0675  
NUMBER OF PAGES: 6

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

HUI, ANGELA

DOC DATE: 03/06/2002

ASSIGNOR:

FANG, SHENGQUING

DOC DATE: 03/22/2002

ASSIGNOR:

KINOSHITA, HIROYUKI

DOC DATE: 03/22/2002

ASSIGNOR:

KO, KELWIN

DOC DATE: 03/22/2002

ASSIGNOR:

LI, WENMEI

DOC DATE: 03/18/2002

ASSIGNOR:

SUN, YU

DOC DATE: 03/22/2002

ASSIGNOR:

OGAWA, HIROYUKI

DOC DATE: 03/22/2002

012800/0675 PAGE 2

ASSIGNOR:  
CHANG, CHI

DOC DATE: 03/22/2002

ASSIGNEE:  
ADVANCED MICRO DEVICES, INC.  
1 AMD PLACE  
SUNNYVALE, CALIFORNIA 94086

SERIAL NUMBER: 10032757  
PATENT NUMBER:

FILING DATE: 12/27/2001  
ISSUE DATE:

STEVEN POST, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS





UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231



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APRIL 07, 2005

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WINSTEAD SECHREST & MINICK  
P.O. BOX 50784  
DALLAS, TX 75201

184/A115W  
809/4/26/05  
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RECORDATION DATE: 03/10/2005

REEL/FRAME: 015870/0041  
NUMBER OF PAGES: 7

BRIEF: ASSIGNMENT AGREEMENT

ASSIGNOR:  
AMD INVESTMENTS, INC.

DOC DATE: 05/15/2003

ASSIGNOR:  
FUJITSU LIMITED

DOC DATE: 05/25/2004

ASSIGNEE:  
FASL LLC  
P.O. BOX 3453  
ONE AMD PLACE  
SUNNYVALE, CALIFORNIA 94088-3453

SERIAL NUMBER: 10150240

FILING DATE:

PATENT NUMBER: 6808992

ISSUE DATE: 10/26/2004

TITLE: METHOD AND SYSTEM FOR TAILORING CORE AND PERIPHERY CELLS IN A  
NONVOLATILE MEMORY

015870/0041 PAGE 2

SERIAL NUMBER: 10032757

FILING DATE: 12/27/2001

PATENT NUMBER:

ISSUE DATE:

TITLE: METHOD AND SYSTEM FOR FORMING DUAL GATE STRUCTURES IN A NONVOLATILE  
MEMORY USING A PROTECTIVE LAYER

SERIAL NUMBER: 09033902

FILING DATE:

PATENT NUMBER: 6065945

ISSUE DATE: 05/23/2000

TITLE: HYDRAULIC ENGINE

SERIAL NUMBER: 09429244

FILING DATE:

PATENT NUMBER: 6448609

ISSUE DATE: 09/10/2002

TITLE: METHOD AND SYSTEM FOR PROVIDING A POLYSILICON STRINGER MONITOR

SERIAL NUMBER: 10155500

FILING DATE:

PATENT NUMBER: 6602776

ISSUE DATE: 08/05/2003

TITLE: METHOD AND SYSTEM FOR PROVIDING A POLYSILICON STRINGER MONITOR

SERIAL NUMBER: 09784907

FILING DATE:

PATENT NUMBER: 6603211

ISSUE DATE: 08/05/2003

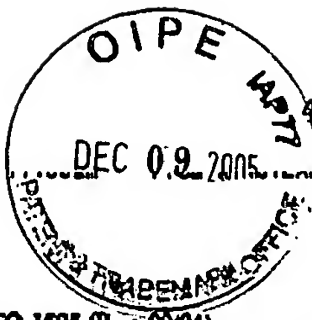
TITLE: METHOD AND SYSTEM FOR PROVIDING A ROBUST ALIGNMENT MARK AT THIN  
OXIDE LAYERSSHARON LATIMER, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

184/P046US

Not on deck  
184/P138US

184/P138D1

184/P164US



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Form PTO-1595 (Rev. 09/04)  
OMB No. 0651-0027 (exp. 6/30/2005)U.S. DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office**RECORDATION FORM COVER SHEET  
PATENTS ONLY**

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below

**1. Name of conveying party(ies)/Execution Date(s):**AMD Investments, Inc  
Fujitsu Limited

Execution Date(s) May 15, 2004; May 25, 2004

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No**3. Nature of conveyance:**

- ☐ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Government Interest Assignment  
☐ Executive Order 9424, Confirmatory License  
☒ Other Assignment Agreement

**2. Name and address of receiving party(ies)**

Name: FASL LLC

Internal Address: One AMD Place

Street Address: P.O. Box 3453

City Sunnyvale

State: California

Country U.S.A. Zip: 94088-3453

Additional name(s) & address(es) attached? ☐ Yes ☒ No**4. Application or patent number(s):**☐ This document is being filed together with a new application

A. Patent Application No.(s)

See Schedule A

B. Patent No.(s)

See Schedule B

Additional numbers attached? ☐ Yes ☒ No**5. Name and address to whom correspondence concerning document should be mailed:**

Name: Winstead Secrest &amp; Minick P.C.

Internal Address:

Street Address: P.O. Box 50784

City: Dallas

State: Texas Zip: 75201

Phone Number: 512.370.2851

Fax Number: 214.745.5390

Email Address: docket@winstead.com

**6. Total number of applications and patents involved:**

6

**7. Total fee (37 CFR 1.21(h) & 3.41) \$ 240.00**

- ☐ Authorized to be charged by credit card  
☒ Authorized to be charged to deposit account  
☐ Enclosed  
☐ None required (government interest not affecting fee)

**8. Payment Information**a. Credit Card Last 4 Numbers \_\_\_\_\_  
Expiration Date \_\_\_\_\_

b. Deposit Account Number 01-0365 (FASL LLC)

Authorized User Name Kelly K. Kordzik

**9. Signature:**

Kelly K. Kordzik

Name of Person Signing

1-19-05  
Date

Total number of pages including cover sheet, attachments, and documents.

8

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Mail Stop Assignment Recordation Services, Director of the USPTO, P.O. Box 1460, Alexandria, V.A. 22313-1460

01/19/2005 10:50:24 AM

## SCHEDULE A

Doc de 11/3/05

| IM Docket | Docket No. | Exhibit<br>Ref. No. | Country | Location | Status | Division | Firm                              | App. No.   | App. Date  | Title   | Inventors  |
|-----------|------------|---------------------|---------|----------|--------|----------|-----------------------------------|------------|------------|---|--|
| P-115US   | AP01101    |                     | USA     | FAS LLC  | Filed  | NVT      | WINSTEAD,<br>SECHREST &<br>MINICK | 10/150,240 | 5/15/2002  | METHOD AND SYSTEM FOR TAILORING CORE<br>AND PERIPHERY CELLS IN A NONVOLATILE<br>MEMORY                    | KO, KING WAI KELVIN<br>23977<br>FANG, SHENG<br>HUI, ANGELA T 21184 |
| P-046US   | AP01171    |                     | USA     | FAS LLC  | Filed  | NVT      | WINSTEAD,<br>SECHREST &<br>MINICK | 10/032,757 | 12/27/2001 | METHOD AND SYSTEM FOR FORMING DUAL<br>GATE STRUCTURES IN A NONVOLATILE<br>MEMORY USING A PROTECTIVE LAYER | HUI, ANGELA T. 21184<br>(CA)<br>FANG, SHENG<br>KINOSHITA           |

T-891 P-011/012 F-876

Mar-10-2006 11:07am FROM-WINSTEAD SECHREST MINICK

DC 1/31/05  
DOJ

| SCHEDULE B      |            |         |          |         |                             |            |            |              |            |   |  |  |
|-----------------|------------|---------|----------|---------|-----------------------------|------------|------------|--------------|------------|---|--|--|
| WISD Patent No. | Patent No. | Country | Location | Status  | Firm                        | App. No.   | App. Date  | Patent No.   | Grant Date | Title   | Inventor   |  |
| 184-P138US      | DA01011    | USA     | FASL LLC | Granted | WINSTEAD, SECHREST & MINICK | 09/563,024 | 5/2/2000   | 6,385,946    | 4/2/2002   | SUBMICRON SEMICONDUCTOR DEVICE HAVING A SELF-ALIGNED CHANNELSTOP REGION AND A METHOD FOR FABRICATING THE SAME | TEMPLETON, MICHAEL K<br>HIOASHITANI, MASAAKI<br>WANG, JOHN JIANSHI |  |
| 184-P138US      | DA01003    | USA     | FASL LLC | Granted | WINSTEAD, SECHREST & MINICK | 09/429,244 | 10/28/1998 | 6,448,608    | 9/10/2002  | PROVIDING A POLYSILOXON STRINGER MONITOR  | HIOASHITANI, MASAAKI<br>FANG, HAO 22708 (CA)                       |  |
| 184-P138US      | DA01003    | USA     | FASL LLC | Granted | WINSTEAD, SECHREST & MINICK | 10/155,500 | 5/22/2002  | 6,602,776 B1 | 4/5/2003   | METHOD AND SYSTEM FOR PROVIDING A POLYSILOXON STRINGER MONITOR  | HIOASHITANI, MASAAKI<br>FANG, HAO 22708 (CA)                       |  |
| 184-P164US      | DA01031    | USA     | FASL LLC | Granted | WINSTEAD, SECHREST & MINICK | 09/491,532 | 1/16/2000  | 6,600,211 B2 | 8/6/2003   | TYPE-1 POLYSILOXON ELECTROSTATIC DISCHARGE TRANSISTORS  | HIOASHITANI, MASAAKI<br>FANG, HAO 22708 (CA)                       |  |



## Environmental, Health, and Safety FAQs

### **Background**

Many of AMD's customers and other key stakeholders are increasingly interested in AMD's approach to environmental, health, and safety (EHS) issues. In order to evaluate AMD's EHS commitment, stakeholders are requesting detailed information on our EHS policies and programs, as well as information on the material composition of AMD's products. To address these questions, AMD has developed the following responses to Frequently Asked Questions (FAQs) regarding AMD's environmental, health, and safety commitment.

### **Scope of This Document**

In July 2003, AMD and Fujitsu formed a new Flash memory company, FASL LLC which manufactures Flash memory products under the Spansion™ brand name. AMD is the majority owner in the joint venture. **FASL LLC was formally renamed Spansion LLC on June 28, 2004, and the company is referred to as "Spansion" throughout this document.** AMD's Bangkok and Suzhou sites were transferred to Spansion, as were certain facilities at the AMD Sunnyvale, AMD Austin, and AMD Penang sites. Fujitsu's Kuala Lumpur, Malaysia site was also transferred to Spansion. Both AMD and Fujitsu contributed their respective shares of the sites in Aizu-Wakamatsu, Japan. AMD continues to provide direct EHS support at all sites and facilities that were solely owned by AMD prior to the formation of Spansion. Fujitsu is no longer providing direct EHS support to the Kuala Lumpur site and is providing limited support to the Aizu-Wakamatsu site.

AMD continues to evaluate the EHS programs and systems in place at facilities that were operated by Fujitsu in Aizu-Wakamatsu and Kuala Lumpur to assess whether they are consistent with AMD's worldwide EHS standards. Fujitsu Group's Environmental Policy, as stated in their 2003 Sustainability Report which is available at: [http://www.fujitsu.com/downloads/ECO/rep2003/2003report\\_e.pdf](http://www.fujitsu.com/downloads/ECO/rep2003/2003report_e.pdf), includes commitments to reducing risks to human health and the environment from the use of harmful chemical substances or waste, conserving energy and natural resources, and reducing the environmental impact of products.

During this period of transition and for the purposes of this Q&A document, references to "AMD" include those sites that were owned by AMD prior to the creation of Spansion. Spansion is referenced when the response is known to be true for all Spansion-owned facilities.

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| 4. | Energy .....  | 8  |
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| 6. | Waste Management and Pollution Prevention.....                  | 11 |
| 7. | Electronics Recycling .....                                     | 12 |
| 8. | Procurement and Supply Chain Management.....                    | 13 |

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## **1. EHS Management**

### **1. Does the company have a written EHS policy statement?**

Yes. AMD's Environmental, Health, and Safety Policy states:

*AMD's culture is rooted in respect for individuals. Our values commit us, as individuals and as employees, to actions that enhance the quality of life and protect the environment of the communities in which we do business. AMD's Environmental, Health, and Safety (EHS) Program reflects our commitment to these values. We have one set of universal standards that govern our practices worldwide. Our EHS Program is designed to provide a safe workplace for employees, protect the environment, prevent damage to property, enhance employee morale, and ensure compliance with applicable laws and regulations worldwide. Achievement of these objectives requires employment of best practices and a commitment to continuous improvement. We hold ourselves -- management and individual employees -- responsible for complying with AMD's EHS standards and fulfilling the intent of this policy.*

### **2. How are AMD Executives involved in environmental issues?**

AMD Executives are kept informed of EHS issues through regular communications and are involved in environmental decision-making in a number of ways.

- As part of AMD's EHS Executive Stewardship Program, individual executives are stewards for specific EHS program areas such as resource conservation, employee health, and business continuity planning. The executive stewards are responsible for supporting EHS efforts and assisting in the achievement of goals as needed.
- Each manufacturing site has a manufacturing EHS committee which is comprised of site managers and EHS professionals. The committees agree on site EHS goals and make decisions regarding how the sites will meet these goals and other key EHS issues.
- EHS reports directly to the Chief Administrative Officer which facilitates access to other AMD Executives when appropriate.
- In addition, EHS briefs the Audit Committee of the Board of Directors on AMD's EHS performance.

### **3. How does AMD promote EHS awareness among employees?**

AMD promotes EHS awareness among employees through a variety of means. EHS instruction and information is provided to all employees upon initial hiring. Most employees receive additional job-specific EHS training on a regular basis. Managers attend courses on site-specific EHS requirements and services, and many sites hold open forums for interested employees to learn about current issues and to ask EHS questions.

AMD's EHS intranet site provides up-to-date information to employees, and the company's internal website and bi-weekly newsletter and site-specific newsletters often communicate EHS highlights. EHS information and performance tracking is presented at employee communication and staff meetings as appropriate. At several sites, site postings are used to communicate important EHS messages and to notify employees about upcoming EHS class offerings. The Austin EHS department participates in on-site employee information fairs organized by the Benefits Department and conducts online quizzes where employees can win prizes such as ergonomic chairs and bikes. AMD's sites in Penang and Singapore hold an annual EHS Awareness Week during which employees engage in numerous activities including emergency response competitions, blood donation, eye exams, non-smoking day, and ergonomics awareness. Furthermore, EHS staff communicate with employees from other departments when issues arise that affect or involve those groups.

AMD also encourages employees to reduce their environmental impact in their daily lives. Site-specific efforts include coordinating carpools and offering incentives such as shuttles and fare subsidies for employees using public transportation and certificates for oil changes and car washes for employees who carpool; giving energy-efficient lightbulbs to employees who completed an on-line pollution prevention quiz; and offering prizes to employees for bringing in batteries from home for recycling.

**4. Does AMD have an environmental management system and a health and safety management system?**

All of AMD and Spansion's manufacturing facilities have established ISO 14001-certified environmental management systems (EMS). The International Organization of Standardization's ISO 14001 is an internationally accepted EMS standard. The standard requires that companies establish systems to identify, communicate, and manage the environmental impacts of the company's operations.

AMD has established occupational health and safety (OHS) management systems as integral parts of EHS management systems at all manufacturing facilities. Most of the existing OHS management systems are aligned or in the process of aligning with ISO 14001 or the nearly identical Occupational Health and Safety Assessment Series (OHSAS) 18001:1999 formats.

| Site                               | ISO 14001<br>Original<br>Certification Date | OHSAS 18001<br>Original<br>Certification Date |
|------------------------------------|---|---|
| Aizu Wakamatsu, Japan              | 2002  |   |
| Austin, Texas, U.S.                | 2002  | 2002  |
| Bangkok, Thailand                  | 1999  | 2001  |
| Dresden, Germany                   | 2001  |   |
| Kuala Lumpur, Malaysia             | 1998  |   |
| Penang, Malaysia                   | 2000  | 2002  |
| Singapore                          | 2000  | 2000  |
| Suzhou, People's Republic of China | 2001  |   |



Copies of certificates are available at:

[http://www.amd.com/us-en/Corporate/AboutAMD/0,,51\\_52\\_484\\_488%5e3163,00.html](http://www.amd.com/us-en/Corporate/AboutAMD/0,,51_52_484_488%5e3163,00.html).

***5. Does AMD use the same standards for environmental compliance and employee safety in other countries as it does in the United States? Please describe AMD's auditing/assessment program.***

Yes, the same EHS standards are applied to all AMD sites worldwide. The purpose of AMD's EHS Regulatory Audit Program is to provide routine, comprehensive environmental, health, and safety regulatory audits utilizing third-party evaluators. All AMD and Spansion manufacturing and major research and development sites participate in this program. Sites are audited with respect to applicable national, territorial, state, provincial, or local environmental, health, and safety laws, rules, or regulations. Internal and external auditors have conducted audits since 1989.

AMD also has developed a set of EHS standards that represent "best practices" and apply to all its sites and operations. The Standards Assessment Program, which is applicable to individual plant sites worldwide, reviews the status of site programs with respect to the elements of AMD's worldwide EHS standards. Standards assessments are conducted by EHS personnel from other facilities. The results of the assessments are used to identify continuous improvement opportunities.

The frequency of site assessments and audits generally ranges between one and three years depending on the nature of the manufacturing operations at the site and how the audit/assessment program schedules overlap.

In addition, the ISO 14001- and OHSAS 18001-certified manufacturing sites have surveillance audits performed at least once a year to ensure that the facilities' environmental and occupational health and safety management systems continue to comply with the ISO 14001 and OHSAS 18001 standards. These audits are supplemented by scheduled internal audits of the facilities' environmental, health and safety management systems performed by AMD employees who are trained auditors.

***6. Do AMD facilities have systems to track EHS laws and regulations that apply to facility operations? Is there a system for communicating this information and training to the appropriate personnel?***

Yes. Subscription services and regulatory publishing firms are typically utilized to obtain the latest laws and regulations. In addition, EHS personnel gather regulatory information from the regulatory agencies themselves through personal contacts and various local workshops and presentations. AMD's law department supplements these services by providing specific regulatory updates applicable to sites. A variety of forums are used to communicate information and train appropriate personnel as regulatory changes occur. These include onsite and offsite regulatory training courses, routine staff meetings, and internal and external publications (electronic, print, or video).

**7. *How does AMD track worldwide environmental performance and how has its performance changed over time?***

AMD has established environmental performance indicators that are tracked at sites around the world. Metrics such as water and energy use and waste generation are collected semi-annually and reported to the AMD executives. Worldwide as well as site-specific data are available in AMD's current Sustainability Progress Report, which can be found at: <http://www.amd.com/ehs>.

**8. *Does the company have written EHS performance objectives/targets?***

Yes, each year AMD documents the company's corporate EHS performance objectives and targets in an EHS strategic plan. Each site also has its own strategic plan with objectives and targets specific to the site's operations and supporting the corporate plan. AMD augments the EHS strategic plan with a balanced scorecard to more clearly highlight the top EHS priorities and better communicate them throughout the corporation. All AMD sites provide input to the strategic planning process.

Targets such as resource conservation goals and progress towards those goals are described in AMD's Sustainability Progress Report and the Global Climate Protection Plan, both of which are available at <http://www.amd.com/ehs/>.

**9. *Does the company have EHS risk reduction programs?***

Yes. AMD has numerous programs and procedures in place to reduce EHS-related risks. The audits and assessments described in the response to question 1.6 are used to ensure compliance with EHS regulations and the best practices required by AMD's worldwide EHS standards, and to identify opportunities for continuous improvement. Federal, state, and local environmental and safety authorities also regularly inspect AMD facilities for compliance with regulatory requirements. In addition, through AMD's property and casualty insurance program, third party engineers conduct annual surveys of manufacturing sites and business practices, evaluating threats to property and business continuity from natural, technological or human events and the mitigation measures in place. AMD addresses the recommended changes and improvements. All AMD manufacturing sites are certified to ISO 14001 and many to OSHAS 18001, both of which reduce EHS risks through accountable management processes.

AMD evaluates the environmental, health, and safety impacts of materials before they are selected and used in manufacturing or other operations. We attempt to select the least hazardous materials for use in our operations by working with the process engineers that are evaluating new technologies. The handling, use, storage, transportation, and disposition of hazardous materials are engineered and strictly controlled to minimize any potential risks to employees, our neighbors, and the environment. Materials selected for use in the final product are evaluated to ensure a safe product for the end-user.

In dealing with its suppliers, AMD has adopted a risk-based methodology in order to balance environmental, health, and safety objectives with performance goals and budget requirements. Within this framework, AMD has prioritized types of suppliers, including waste management

service providers, chemical suppliers, construction contractors, foundries, and manufacturing subcontractors, according to potential risk, and has launched a program to assess and work with suppliers in each risk class. Within each category, AMD identifies appropriate tools to evaluate suppliers, work with them on improvements, and manage risk. AMD complements this risk-based approach with a World Class Supplier process that is designed to assist us in selecting the best suppliers with which to partner.

**10. *Do you have an EHS report specifically regarding the activities at your sites?***

AMD's annual Sustainability Progress Report includes detailed information on AMD's EHS initiatives, programs, and performance at both the corporate and site-specific level. AMD's Global Climate Protection Plan describes efforts specifically focused on reducing greenhouse gas emissions at AMD sites worldwide. Copies of both reports are available at <http://www.amd.com/ehs>.

**2. Water**

**1. *Does AMD have a formal goal to reduce water use?***

AMD has established a goal to reduce normalized water use by 40% by 2007 relative to the baseline year of 2002. Normalized water use is measured as the total water used per unit of production.

**2. *What is AMD doing to conserve water?***

All AMD sites have aggressive programs designed to reduce the amount of water consumed and to increase the amount of water conserved. Site-specific data is available in AMD's Sustainability Progress Report and on the Resource Conservation pages of our website at <http://www.amd.com/ehs/>.

**3. *What measures have been implemented to reduce the amount of wastewater generated and the contaminants it contains?***

AMD has established worldwide EHS standards, one of which requires all sites to develop and implement Pollution Prevention and Resource Conservation Programs designed to reduce the generation of waste and the consumption of raw materials and natural resources. Specific water and wastewater programs are covered under this standard. AMD's Industrial Wastewater Standard requires that sites have programs in place to ensure that wastewater generated is disposed of appropriately and poses no threat to human health or the environment. AMD's Dresden site is designed to allow for the recycling or reuse of most consumables, including water. Through thorough segregation of process chemical waste streams and rinse waters, cross contamination is avoided and the liquid wastes are more easily recovered, reused, or recycled. The Dresden design has resulted in the recycling of 45 percent of the ultra-pure water from the manufacturing process. Details about specific water reduction efforts undertaken at individual sites are available in our Sustainability Progress Report and on our Resource Conservation webpages at <http://www.amd.com/ehs/>.

### **3. Climate Change/Air**

#### ***1. What measures have been implemented to reduce emissions to air?***

AMD sites have established air emission elimination and reduction strategies that rely upon waste minimization, material substitutions, and air treatment or control technologies. Best Available Control Technologies (BACT), such as regenerative thermal oxidizers or rotary concentrator technology, are used to control emissions of volatile organic compounds (VOCs) from wafer fabrication operations. In 1989, AMD began a systematic worldwide effort to eliminate the use of ozone depleting substances (ODSs) in the manufacturing process. AMD completed its elimination of chlorofluorocarbons (CFCs) in manufacturing processes in 1993.

For a number of years, AMD has been pursuing an aggressive perfluorocompound (PFC) emissions reduction strategy, which is explained in detail in our Global Climate Protection Plan at <http://www.amd.com/ehs>.

#### ***2. What is AMD's position on global climate change?***

AMD shares the views of most scientists that climate change with its related potential environmental impacts is an important global issue. We recognize that we need to take precautionary action to protect our global climate, which simultaneously helps to ensure our business future. We will take technically and economically feasible actions to reduce global warming gas emissions. Our commitment, strategies, and progress in achieving our goals will be reviewed annually at the executive level of the corporation. For more information, please see AMD's Global Climate Protection Plan at <http://www.amd.com/ehs/>.

#### ***3. Do any of the products sold by your company contain Ozone Depleting Substances (ODSs) or are any of the products manufactured with ODSs?***

Products manufactured by AMD do not contain ozone depleting substances and are not manufactured with ozone depleting substances as defined by the U.S. Clean Air Act and German CFC Prohibition Directive.

#### ***4. What is AMD doing to address the global warming issue?***

AMD's greatest potential influence on global climate change is through changes in the manufacturing process and continued improvement in AMD and Spansion™ product design. Greenhouse gas emissions associated with the manufacturing process are perfluorocompounds (PFCs) and carbon dioxide (CO<sub>2</sub>). PFC emissions result directly from the use of these materials in manufacturing. CO<sub>2</sub> emissions are generated indirectly through the energy consumed during the manufacturing process. When new manufacturing technologies are being developed, AMD assesses the environmental impacts of all materials involved. The global warming potential of these new materials is one of the environmental impacts evaluated. This early assessment of new materials enables AMD to take appropriate measures very early in manufacturing process development.

AMD's second potential influence on global climate change is through the electrical consumption of our products. Lower energy consumption during the use-phase of a product's life cycle will result in a reduced need for electrical generation and a corresponding reduction in CO<sub>2</sub> emissions. AMD consistently strives to develop increasingly energy-efficient products. AMD provides energy-efficient solutions for all product categories, and in many categories is an industry leader.

For greater detail, please refer to AMD's Global Climate Protection Plan at <http://www.amd.com/ehs/>, which offers a comprehensive overview of AMD's strategy to address the issue of global climate change and specific projects undertaken to decrease greenhouse gas emissions.

***5. What is AMD doing to reduce greenhouse gas emissions? Has AMD set any PFC reduction targets?***

In June 2001, AMD published the company's first "Global Climate Protection Plan," which offers a comprehensive overview of AMD's strategy to address the issue of global climate change. The plan includes goals to reduce greenhouse gas emissions, energy consumption, and perfluorocarbon emissions and describes our progress towards meeting these goals. In addition, the plan discusses our use of more efficient energy sources and efforts to educate our employees about how they can help reduce energy usage in their daily lives. The Global Climate Protection Plan is updated annually and is available at: <http://www.amd.com/ehs>.

**4. Energy**

***1. Have you defined quantitative goals to reduce energy consumption?***

Yes. AMD established a corporate goal of 30% reduction in energy consumption by 2007 normalized for production, using the year 2002 as a baseline. Energy consumption is expressed as metric tons of carbon equivalent emissions. AMD has also established site-specific energy goals for its manufacturing facilities.

***2. What measures have been implemented to reduce energy consumption?***

Numerous projects to reduce AMD's energy consumption have been undertaken at AMD's sites worldwide. Sites have installed variable speed drives for compressed air and exhaust systems; upgraded to more efficient chillers; implemented lighting efficiency and reduction projects; optimized airflow, cross-connected chillers, boilers, condensers and driers to increase utilization of more efficient HVAC units; optimized the energy efficiency of equipment operation; and upgraded computer networks. State-of-the-art energy efficiency features are designed into new construction, for example at the Singapore, Bangkok, and Dresden facilities.

AMD has also improved energy-efficiency by going directly to the source. Nearly all of AMD Dresden's power needs are met by a dedicated co-generation plant powered by clean-burning natural gas reciprocating engines. The 24-megawatt facility captures by-product heat that is



typically wasted and uses it to heat and cool Fab 30. The plant's absorption chillers convert heat energy to cooling energy without the use of ozone-depleting refrigerants. The result is a power plant that is 70% efficient, far better than the 50% delivered by conventional combined cycle power plants and the 35% efficiency of conventional standard turbine natural gas power plants. A second co-generation plant is planned to support Fab 36 which is currently under construction.

AMD Austin is one of the largest subscribers to Austin Energy's Green Choice Program, purchasing 36 million kilowatt-hours of electricity each year from renewable sources. In 2001, AMD Austin became the first semiconductor manufacturer to join EPA's Green Power Partnership, a voluntary program in which organizations commit to purchasing a percentage of their energy from renewable sources. AMD was recognized with the 2002 Green Power Leadership Award by the U.S. Department of Energy and the U.S. EPA for purchasing such large quantities of renewable energy that in turn helps advance the development of renewable energy sources.

For more detailed information about specific energy efficiency projects implemented at the individual sites, please see AMD's Sustainability Progress Report which is available at: <http://www.amd.com/ehs>. In addition, information about how energy efficiency measures are integrated into AMD's product design process is provided in the Product Stewardship section of this document.

## **5. Hazardous Materials Management and Constituents of Concern**

### ***1. What efforts has AMD undertaken to reduce and eliminate the use of hazardous substances?***

AMD evaluates the environmental, health, and safety impacts of materials before they are selected and used in manufacturing or other operations. We attempt to select the least hazardous materials for use in our operations by working with the process engineers that are evaluating new technologies. The handling, use, storage, transportation, and disposition of hazardous materials are engineered and strictly controlled to minimize any potential risks to employees, our neighbors, and the environment. Materials selected for use in the final product are evaluated to ensure a safe product for the end-user.

In 1989, AMD began a systematic worldwide effort to eliminate the use of ozone depleting substances. AMD completed its elimination of chlorofluorocarbons (CFCs) in manufacturing processes in 1993. In addition, AMD eliminated its use of ethylene glycol ethers in manufacturing in 1995.

AMD also has invested in pollution prevention and treatment systems that significantly reduce chemical use and emissions. For example, in Austin and Dresden diluted waste sulfuric acid from the manufacturing process is used for wastewater neutralization allowing us to save thousands of gallons of acid per year. Dilute waste sulfuric acid from the Austin site is also sent for direct reuse as a feedstock in other industrial processes. Furthermore, Austin's World Class Supplier teams that are responsible for the chemicals consumed in the greatest quantities look for ways to use those chemicals more efficiently. These groups have identified opportunities to





switch to less hazardous chemicals, decrease the quantity of chemicals used, and decrease the concentration of chemicals used in the production processes.

AMD's Dresden facility has a four-stream solvent waste collection system similar to Austin's. This system segregates the solvent wastes, facilitating reuse and recycling options. Dresden's Site Emission Control and Internal Waste Logistics teams look for opportunities to decrease the site's waste and emissions, which often include decreasing the quantity of hazardous substances used in the production process; for example, one project resulted in the reduced use of a corrosive oxidizer by approximately 150 gallons per week. AMD continually looks for new ways to reduce hazardous waste, including more efficient chemical use and segregation of waste streams for reuse.

***2. Does AMD consider resource and utility use when selecting manufacturing tools?***

Yes, AMD considers resource and utility use when selecting manufacturing tools. During the fact-finding phase of equipment selection and procurement, AMD's tool suppliers are obligated to provide cost of ownership information to AMD based on the most recent International SEMATECH Cost of Ownership model. AMD's complete cost of ownership and operation analysis reviews electricity, water, and chemical use in addition to safety requirements in conformance with the SEMI S2-2000 Equipment standard.

***3. What are AMD's plans for phasing out the use of lead in products?***

All product groups have established development plans for lead-free products. Many lead-free Spansion and AMD products are already available in production volumes. Detailed information about availability of specific package types as well as other characteristics of lead-free products is available:

- Spansion products at: [www.amd.com/spansion-pb-free](http://www.amd.com/spansion-pb-free)
- Microprocessors at:
- [http://www.amd.com/us-en/Processors/ProductInformation/0,,30\\_118\\_4040,00.html](http://www.amd.com/us-en/Processors/ProductInformation/0,,30_118_4040,00.html).

***4. Does AMD use any of the following substances in its products or manufacturing processes?***

**Ethylene-based glycol ethers (EGEs):** AMD eliminated its use of EGEs in manufacturing in 1995.

**CFCs:** AMD eliminated the use of CFCs in manufacturing in 1993.

**PFCs:** AMD has established a corporate-wide PFC emissions goal of a 50% absolute reduction by the year 2010, relative to the 1995 baseline year.

**Mercury:** Mercury is not used in AMD's manufacturing process. AMD's products do not contain intentionally added mercury.



**Cadmium:** Cadmium is not used in AMD's manufacturing process. AMD's products do not contain intentionally added cadmium.

**Brominated Flame Retardants:** AMD uses brominated epoxies in some IC package types. AMD does not use PBBs or PBDEs (this includes Penta-BDEs, Octa-BDEs, and Deca-BDEs). AMD has identified or is currently evaluating possible substitutes for other brominated flame retardants in its products.

**PFOS:** AMD uses PFOS in three areas in our manufacturing processes: in some photoresists, antireflective coatings (ARCs), and photoresist developers as a surfactant. Ever since the U.S. EPA began investigating the potential environmental and health concerns related to PFOS in 2000, AMD has been taking the issue of PFOS very seriously and researching how to significantly reduce the use of these substances in the manufacturing process. All AMD wafer fabrication sites are developing plans to reduce or eliminate PFOS use and emissions.

## **6. Waste Management and Pollution Prevention**

### ***1. What are your methods of material disposal?***

AMD adheres to the pollution prevention hierarchy in which waste products should be prevented or reduced at the source whenever feasible. If waste products cannot be prevented, they should be recycled whenever feasible. Waste that cannot be prevented or recycled should be treated in an environmentally safe manner, and disposal or other release into the environment should be employed only as a last resort. According to this hierarchy, AMD's preference is to prevent, reduce, reuse, or recycle wastes. However, if these options do not exist, the sites use the most technically feasible and/or regulatory mandated disposal methods, which may include incineration or landfilling.

### ***2. Does AMD have a goal to reduce hazardous waste generation?***

Yes, AMD has established a goal to reduce hazardous waste generation normalized for production, by 10 percent by 2007, relative to a baseline year of 2002.

### ***3. How has global hazardous waste generation changed over time?***

Information about AMD's hazardous waste generation and reduction efforts is available in our Sustainability Progress Report and on our Resource Conservation webpages at <http://www.amd.com/ehs>.



**4. Does AMD have a goal to reduce solid waste generation?**

Yes, AMD has established a goal to reduce absolute solid waste generation by 1,000 metric tons, by 2007, relative to a baseline year of 2002.

**5. What measures have been implemented to reduce solid waste?**

AMD is committed to reducing waste through methods such as source reduction, reuse, and recycling. AMD has established worldwide EHS standards, one of which requires all AMD sites to develop and implement Pollution Prevention and Resource Conservation Programs designed to reduce the generation of waste and the consumption of raw materials and natural resources. AMD recycles and reclaims many materials such as scrap integrated circuits, glass and plastic chemical bottles, paper, cardboard, scrap wood, pallets, silicon wafers, latex gloves, scrap metals, and beverage containers.

More information on AMD's waste reduction initiatives can be found in the Sustainability Progress Report and on our Resource Conservation webpages at <http://www.amd.com/ehs>.

**7. Electronics Recycling****1. What does AMD do with obsolete electronic equipment?**

Each site has its own process for disposing of obsolete equipment. Since 1997, AMD's Reclaim Department in Sunnyvale has been sending obsolete equipment to the Alameda County Computer Resource Center, a non-profit organization that has a training program for rebuilding computers that are donated to schools and non-profit organizations. The Center trains underprivileged interns to identify parts, strip usable parts, clean hard drives, and build systems. The Center accepts all electronic equipment, about 90% of which is usable. The 10% that is not usable is shipped to recycling facilities elsewhere in North America. Equipment that is non-working and not proprietary is sent to the AMD Reclaim Department and sent to a reclaim facility for de-manufacturing, recycling, and recovery of gold and other metals.

AMD Austin donates computers and parts to Goodwill Industries' program that provides job training for disabled people and other challenged individuals. Reconditioned computers are sold at affordable prices at the Goodwill Computer Works store to fund the program. The Austin site sends equipment that is no longer working and not proprietary to a reclaim facility for de-manufacturing, recycling, and recovery of gold and other metals; and has recently started a cell phone recycling program.

AMD's Asia sites donate working electronic equipment to schools and government or to vendors for resale. Non-working equipment is sent to recyclers for recycling or refurbishing. Non-working equipment that requires disposal as hazardous waste is sent to hazardous waste treatment facilities that have been audited under AMD's Waste Facility Audit Program. In Dresden, electronic scrap is transferred to a local recycling company. Working used electronic equipment is returned to the supplier.



Circuit boards, off-spec final products, and other AMD proprietary materials from AMD sites are sent to reclaim facilities for reclamation of metals and other materials. These facilities have been audited by EHS.

## **8. Procurement and Supply Chain Management**

### ***1. Does your company have formal procurement guidelines for minimizing EHS impact associated with goods and services purchased by the company?***

Yes. AMD's Green Procurement Guidelines for office equipment and office supplies describe environmentally preferable product features for consideration when making purchasing decisions. AMD has established various other procurement guidelines, including the Capital Equipment Procurement Document, Packaging Material Specification, Chemical Reviews, and SEMI S2 Reviews (Safety Guidelines for Semiconductor Manufacturing Equipment) that also include EHS considerations.

Furthermore, in dealing with its suppliers, AMD has adopted a risk-based methodology in order to balance environmental, health, and safety objectives with performance goals and budget requirements. Within this framework, AMD has prioritized types of suppliers, including waste management service providers, chemical suppliers, construction contractors, foundries, and manufacturing subcontractors, according to potential risk, and has launched a program to assess and work with suppliers in each risk class. The system utilizes a combination of audits and self-assessment questionnaires. The objective of this program is to address identified issues with potential or current vendors posing unacceptable business and/or environmental, health, and safety risk through partnership interactions. Resolution is sought in a manner that helps the supplier improve their operations and serves in the interest of AMD.

Our World Class Supplier process is a vendor-partnering program that requires adherence to ethics, attitudes, and behaviors based on principles of integrity, mutual trust, open communication, respect, and cooperation. This program includes EHS performance and initiative evaluations, and all participating vendors are routinely reviewed to assure that they meet AMD's expectations.

All contractors working on AMD sites are required to adhere to our EHS standards and programs as well as comply with all regulatory requirements.

### ***2. Has AMD ever dismissed or foregone a supplier or contractor for mainly environmental reasons?***

Yes. AMD has dismissed potential suppliers for poor environmental performance and for inadequate facilities to ensure environmental protection.

**3. *Does the company have a documented supplier review program that ensures conformance of its suppliers to legal requirements?***

In addition to contract conditions that specify conformance of suppliers to applicable regulatory requirements, AMD World Class Supplier and Quality programs include an environmental, health, and safety review of suppliers. Compliance with legal requirements is a component of the supplier assessments and audits.

**9. Worker Safety**

**1. *Does your company have a written worker safety policy?***

AMD has a written EHS policy that includes worker safety in its scope. See Question 1.1.

**2. *Does your company have a written worker safety program?***

AMD has developed a set of written EHS standards, more than half of which address worker health and safety. These standards apply to all AMD sites and operations. The EHS standards represent best practices and are one way that AMD demonstrates its commitment to employee safety and continuous improvement. Standards such as Electrical Safety, Equipment Safety, and Injury and Illness Prevention address specific worker safety issues. The Standards Assessment Program, which is applicable to AMD sites worldwide, reviews the status of site programs with respect to the elements of AMD's Worldwide EHS standards. Standards Assessments are conducted by EHS personnel from other company facilities, and the results of the assessments are used to identify continuous improvement opportunities.

**3. *Does your company conduct regular health and safety training?***

Yes, AMD's corporate Training Standard ensures that employees at all sites worldwide are properly trained to maintain a safe and healthy workplace, and to prevent industrial accidents, injuries, and illnesses. Over 40 safety and health classes (classroom and computer based) are available at both AMD's Sunnyvale and Austin sites either on a voluntary or mandatory basis depending on the class and job functions. These classes include a broad range of topics from general to specific chemical safety, electrical safety, hazard communication, ergonomics, CPR, first-aid, and emergency response. All AMD sites have comparable training programs to meet their specific needs.

**4. *How do your injury and illness rates compare to those of other companies in the semiconductor manufacturing industry?***

Two different databases track semiconductor industry injury rates: the U.S. Bureau of Labor Statistics (BLS) and SIA's Occupational Health System (OHS), which represents about 85 percent of the total semiconductor workforce in the U.S. Information about AMD's injury and illness rates and a comparison with the BLS and OHS averages is available in our Sustainability Progress Report and on our Health and Safety webpage at <http://www.amd.com/ehs>.

## **10. Product Stewardship**

### ***1. Does AMD perform life cycle evaluations on its products?***

AMD does not perform formal life cycle evaluations on our products at this time. However, we support continuous improvement in minimizing the environmental impact of our products and manufacturing processes throughout the product life cycle. We recognize the need to conduct a timely review of the environmental, health, and safety implications of new manufacturing options and materials during the early stages of research and development. Conceptually, a life cycle assessment (LCA) is designed to evaluate environmental impacts throughout the product life cycle. Application of LCA in the semiconductor manufacturing industry on a product-by-product basis is not feasible due to the dynamic nature of the products and continually changing manufacturing process. Alternatively, AMD favors the voluntary use of predictive rather than historical LCA tools that are sensitive to cost and performance trade-offs; that include the environmental, health, and safety aspects of product design, manufacturing, use, and end of life; and that are used as decision-supporting rather than decision-making tools.

AMD's approach to design, manufacturing, and transport decisions takes into account the environmental impacts of AMD products and processes at numerous stages along the life cycle. For example, our Chemical Review Standard requires that the selection of manufacturing chemicals include a detailed review of the environmental, health, and safety impacts associated with their use. Similarly, our selection of new process tools includes a review of resource use and waste generation. AMD Saxony personnel conducted an LCA of the manufacturing process at Fab 30 in Dresden to prioritize resource conservation efforts. AMD and Spansion have worked extensively to design products that minimize energy consumption during their usage.

### ***2. Does AMD incorporate design-for-environment concepts into product design and manufacturing?***

Yes. In addition to designing lower power consumption products, resource utilization in the manufacturing process is evaluated by the supplier of the manufacturing equipment that AMD purchases and by AMD's process engineers. EHS representatives participate on the Advanced Materials Review Board, which is organized by the Technology Development Group and performs initial reviews of new materials being considered for use in manufacturing. All new chemicals are also subject to a final formal review process that considers their environmental, health, and safety impacts when determining whether to approve them. Additional information about AMD's Design for Environmental, Health, and Safety (DfEHS) efforts is available at <http://www.amd.com/ehs>.

In addition, AMD actively participates in groups that perform industry-specific environmental research and development such as International SEMATECH, whose research efforts include emissions reductions for PFCs, energy and water reduction, and acquisition of chemical data for emerging technologies. AMD is also involved with the Engineering Research Center (ERC) for Environmentally Benign Semiconductor Manufacturing, a multi-university organization funded by the National Science Foundation and Semiconductor Research Corporation. This Center focuses on developing science, technology, and educational methods that will decrease resource consumption and waste production in semiconductor manufacturing, such as an improved silicon



wafer rinsing technique in use at AMD. AMD has hired several ERC graduates who work in the technology development, manufacturing, and EHS organizations.

With the introduction of the AMD Opteron™ and AMD Athlon™64 microprocessors for server, workstation, desktop and portable PCs, AMD offers customers a computing solution that can address their current and future needs on the same system, thereby extending the life of that system. Using AMD64 technology, these processors are fully compatible with existing 32-bit software while enabling a transition to developing 64-bit applications based on individual customer needs.

**3. *Has AMD incorporated energy efficiency into product design?***

Yes. AMD strives to provide energy-efficient solutions with state-of-the-art power management technology for all product categories, and in many categories are industry leaders. Detailed information about the energy efficiency of AMD and Spansion products is available in AMD's Global Climate Protection Plan and on AMD's Design for EHS program webpages at <http://www.amd.com/ehs>.

**4. *Are any of the company's products certified with an official eco-label (e.g., Energy Star, Blue Angel)?***

Most eco-label certifications are available for consumer products, not components. As a result, AMD and Spansion products are not eligible for most eco-labels. However, in March 2001, the U.S. Environmental Protection Agency and the U.S. Department of Energy awarded AMD an ENERGY STAR® Certificate of Recognition for its energy-efficient processors, including the AMD Athlon™, AMD Athlon MP, mobile AMD Athlon 4, and AMD Duron™ processors, its energy-efficient Flash memory devices, its AMD-760™ chipset, and its AMD PowerNow!™ technology. These products help manufacturers meet stringent ENERGY STAR specifications for a variety of appliances, equipment, and other products. Products with the ENERGY STAR label are designed to use less energy, save money, and help protect the environment.

**5. *Does AMD have a product take-back program?***

AMD is a component manufacturer and does not generally sell end-consumer goods. However, AMD provides our customers with information about the materials contained in AMD products to ensure that their disassembly and recycling needs are met.

- Information about the product content of Spansion Flash memory products is available at: [http://www.amd.com/us-en/FlashMemory/TechnicalResources/0,,37\\_1693\\_8844\\_8845,00.html](http://www.amd.com/us-en/FlashMemory/TechnicalResources/0,,37_1693_8844_8845,00.html).
- Information about microprocessors is available at: [http://www.amd.com/us-en/assets/content\\_type/DownloadableAssets/04packagematerials3.pdf](http://www.amd.com/us-en/assets/content_type/DownloadableAssets/04packagematerials3.pdf).
- Information about Personal Connectivity Solutions products is available at: [http://www.amd.com/us-en/assets/content\\_type/DownloadableAssets/MDS\\_041112.pdf](http://www.amd.com/us-en/assets/content_type/DownloadableAssets/MDS_041112.pdf)

**6. *How has AMD reduced the environmental impact of its packaging?***

AMD has taken numerous measures to reduce the environmental impact of AMD's packing materials. Green and white shipping boxes were replaced with all-brown boxes that do not require chlorine bleaching and contain a higher content of recycled material. AMD has reduced printing on packing and changed to materials that are more recyclable. Packaging tubes are not reusable due to antistatic coating and data codes, but they are recyclable. Nylon pins and neoprene plugs in PVC device tubes have been replaced with PVC pins and plugs for increased recyclability of the assembly.

AMD recently redesigned the packing materials for some Processor-In-A-Box products, switching from a PVC clamshell to a cardboard box with an inner paper tray. This new design significantly increases the recyclability of the packing materials.

Customers can return device trays to our supplier free of charge; those that meet performance standards are reused. Trays that cannot be reused are shredded and recycled into new trays. Recyclers are often willing to pay for used trays, which increases the likelihood that AMD customers will recycle them. Trays used internally are recycled and reused.

**11. EHS Initiatives**

**1. *In what voluntary EHS initiatives does AMD participate?***

AMD participates in numerous voluntary EHS initiatives at the international, national, and local levels including:

- American Electronics Association (AeA) and AeA Europe,
- American Industrial Hygiene Association,
- Electronics Industries Alliance (EIA),
- Energy Star Program,
- European Semiconductor Industry Association (ESIA),
- Global Reporting Initiative (GRI),
- International SEMATECH,
- PFC Reduction/Climate Partnership for the Semiconductor Industry,
- Semiconductor Equipment and Materials International (SEMI),
- Semiconductor Industry Association (SIA),
- Semiconductor Research Corporation (SRC), Center for Environmentally Benign Semiconductor Manufacturing
- Semiconductor Safety Association,
- U.S. DOE's Voluntary Reporting of Greenhouse Gases Program,
- U.S. EPA initiatives including WasteWise, Green Power Partnership, and Climate Leaders Program
- World Semiconductor Council ESH Task Force, and
- Numerous local programs and initiatives.



## **12. Community Initiatives**

### ***1. Does AMD have Community Advisory Panels or similar forums to provide an opportunity to communicate with members of the community in which the company does business?***

AMD proactively contacts neighbors, including residents, businesses, schools, and government agencies near our manufacturing facilities to establish relationships and open communication with them if they have any concerns or questions about AMD's operations. In Austin, representatives from the EHS department hold quarterly meetings with residents from the nearby community, giving them an opportunity to ask questions about AMD's operations and any AMD impacts on the surrounding community. The Sunnyvale facility notifies neighbors about specific issues (e.g., explaining temporary operation of emergency generators) occasionally via flyers, neighborhood associations, and door-to-door campaigns.

Similar communication mechanisms exist at other AMD facilities. For example, the Bangkok site holds an annual Community Relations Day during which members from community groups, government agencies, and schools are invited to meet with AMD management to learn more about the company, community-related activities, and environmental performance, and to go on a plant tour. AMD Dresden holds semi-annual Town Meetings to share environmental information with neighbors and to offer them the opportunity to ask questions and voice concerns. AMD Singapore is part of the Bedok Safety Group, which consists of major companies in the area. The Group holds monthly meetings for communication between the companies and the community as well as organizes promotional workshops and campaigns. The Penang and Suzhou facilities share information with the community through non-government organizations and government agencies, as is more common in Malaysia and the People's Republic of China.

## **13. EHS Awards**

- Award for No Lost Day Injuries for 7 Million Workhours – Aizu-Wakamatsu Labor Standards Inspection Office, 2004
- Top 20 Best Workplaces for Commuters for Austin's Commute Solutions Program – U.S. EPA and U.S. DOT, 2004
- "Most Miles Saved" Award for Austin's Commute Solutions Program – Clean Air Partners, 2004
- Top 25 Partners in Green Power Partnership for Austin's renewable energy purchases – U.S. EPA, 2004
- "Green" Designation for Spansion Suzhou's excellent environmental performance – Suzhou Environmental Protection Bureau, 2004
- Exceptional Achiever Hibiscus Award for environmental performance at AMD Penang – Prime Minister of Malaysia, 2003
- Healthy Workplace Award - Thailand Ministry of Public Health, 2002 - 2004
- Clean Food, Good Taste Certificate - Thailand Ministry of Public Health, 2000 - 2004
- State of California's Waste Reduction Awards Program award for recycling and solid waste reduction for 10 consecutive years, 1995-2004

- Commendation for Environmental Reporting – Coalition for Environmentally Responsible Economies (CERES) and the Association of Chartered Certified Accountants (ACCA), 2003
- Certificate of Recognition for Penang site's participation in Penang Recycling Program - Penang State Municipal Council and Malaysia Department of Environment, 2003
- Certificate of Zero Lost Workday Accidents for no lost workday accidents from January 2000 - December 2002 - Thailand Ministry of Labor, 2003
- Health Award - Singapore Health Promotion Award, 2003
- Silver Award for the Singapore site's excellent safety record - Ministry of Manpower, 2001 and 2003
- Suzhou - SIP Advanced Company of Environmental Protection, 2003
- WasteWise Program Champion Award – U.S. EPA, 2001 and 2002, Honorable Mention 2003
- Excellence in Pretreatment Award for compliance with stringent wastewater treatment regulations City of Austin, 1999-2003
- Water Conservation Award for Excellence – City of Austin, 1996, 2001-2003
- Best Environmental Management in Pakkred (Nonthaburi province where AMD Bangkok is located) – Pakkred Municipal Council, 2002
- 2002 Green Power Leadership Award – U.S. EPA and U.S. Department of Energy
- H.E.A.L.T.H. Bronze Award - Singapore Health Promotion Board, 2002
- 34<sup>th</sup> Flower Contest: Excellent Award for FASL facility – Fukushima Minya Shimbun, 2002
- Hanazono Contest: Most Excellent Award for Greenification – Citizens' Charter Promotion Committee, Aizu Wakamatsu City
- Alternative Transportation Achievement Award – Trans Texas Alliance, 2002
- Environmental Achievement Award for Solid Waste Recycling – City of Sunnyvale, 2002
- The Clara Award - 2001 Outstanding Corporate Citizen for longstanding commitment to providing a safe working environment for employees and the local community – American Red Cross of Santa Clara Valley, 2001
- Safety Performance Award Certificate of Merit, from the Singapore Minister of Manpower, 1999, 2000, 2002, and 2004
- Private Enterprise Honorable Mention for AMD Austin's Commute Solutions – City of Austin, 2001
- ENERGY STAR® Certificate of Recognition – U.S. EPA and U.S. Department of Energy, 2001
- Austin Energy GreenChoice™ Corporate Champions Award, 2000
- Silicon Valley Groundwater Cleanup Project - Outstanding Environmental and Engineering Geologic Project, Association of Engineering Geologists, 2000
- Environmental Achievement Award for outstanding commitment to environmental preservation – contribution to City's voluntary stormwater sampling program, regulatory compliance, and establishment of EHS standards - City of Sunnyvale, 1999
- Pollution Prevention and Resource Conservation Award for the Sunnyvale site – Peninsula Conservation Center Foundation, 1998
- Second Place Keep Austin Beautiful Education Initiatives Award, 1998





- Outstanding Industry Award for Conservation of Environmental Quality - Thai Ministry of Industry, 1998
- Energy Star Award for Magic Packet™ technology - U.S. EPA, 1997
- Susanne Wilson Environmental Achievement Award for voluntary program to reduce emissions of potential global warming gases– Santa Clara County Hazardous Materials Advisory Committee, 1996-1997
- Keep Austin Beautiful Award for recycling and employee awareness, 1996
- Employee Awareness Award - Capital Area Recycling Council and the Texas Corporate Recycling Council, 1996
- Prime Minister's Safety Award – Bangkok, 1996
- Awards for outstanding safety program and participation in the Thai Industries Clean Technology Program - Thai Ministry of Labor and Social Welfare on Environmental and Safety, Thai Ministry of Industry, 1996
- Solid Waste and Recycling Award – City of Sunnyvale, 1995
- Keep Austin Beautiful Awards in all categories – 1995
- Environmental Achievement Award – City of Sunnyvale, 1992
- Award for innovative water conservation improvements in wafer fabrication- City of Santa Clara, 1989